TM 11-2571

DEPARTMENT OF THE ARMY TECHNICAL MANUAL

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BATTERY TESTERS

TS-183/U, TS-183A/U

AND TS-183B/U

DEPARTMENT OF THE ARMY • *FEBRUARY 1952*

AGO 2650B—Feb

TECHNICAL MANUAL

BATTERY TESTERS TS–183/U, TS–183A/U AND TS–183B/U

CHANGES No. 1

DEPARTMENT OF THE ARMY
WASHINGTON 25, D. C., *16 March 1956*

TM 11–2571, 19 February 1952, is changed as follows:

Page 2, paragraph 4. Change 1.3 volts to 300 volts to read: **1.3 volts to 200 volts.**

Delete the note at the end of paragraph 4.

Page 10, paragraph 13. Make the following changes:

a. In line 1, change table to read: **tables.**

Add the following after *a:*

Caution: Be extremely careful to select the proper jack for the battery that is being tested. Use of a wrong jack may result in a damaged meter or a burned-out load resistor.

d. In line 2, change table to read: **tables.**

e. Delete the battery test data table and replace it with the following:

(1) A test data table for type-numbered batteries follows:

Battery type No.	Jack No.	Minimum permissible voltage	Battery type No.	Jack No.	Minimum permissible voltage
BA–2	15	21. 0	BA–30	3	1. 35
BA–1002/U	11	18. 0	BA–1030/U	2	1. 00
BA–2002/U	15	21. 0	BA–2030/U	3	1. 35
BA–1003/U	7	5. 0	BA–31	7	3. 84
BA–1004/U	5	5. 0	BA–2031/U	7	3. 84
BA–1005/U	5	5. 0	BA–33	28	126. 0
BA–1006/U	4	1. 0	BA–1033/U	21	104. 0
BA–8	15	21. 0	BA–2033/U	28	126. 0
BA–2008/U	15	21. 0	BA–34	8	6. 40
BA–9	7	3. 84	BA–2034/U	8	6. 40
BA–2009/U	7	3. 84	BA–35	1	1. 40
BA–15A	2	1. 40	BA–1035/U	1	1. 00
BA–1015A/U	1	1. 00	BA–2035/U	1	1. 40
BA–2015A/U	2	1. 40	BA–36	13	42. 0
BA–23	1	1. 33	BA–1036/U	12	36. 0
BA–2023/U	1	1. 33	BA–2036/U	14	42. 0
BA–26	16	42. 0	BA–37	3	1. 40
BA–2026/U	16	42. 0	BA–1037/U	1	1. 0
BA–27	7	4. 05	BA–2037/U	3	1. 40
BA–2027	7	4. 05	BA–38	25	95. 2
BA–28	10	4. 20	BA–1038/U	21	72. 0
BA–1028/U	6	3. 0	BA–2038/U	25	95. 2
BA–2028/U	10	4. 20	BA–39 (A)	8	7. 0

Battery type No.	Jack No.	Minimum permissible voltage	Battery type No.	Jack No.	Minimum permissible voltage
BA–39 (B)	28	140. 0	BA–70 (A)	5	4. 20
BA–1039/U (A)	5	6. 0	BA–70 (B_1)	23	84. 0
BA–1039/U (B)	22	120. 0	BA–70 (B_2)	21	56. 0
BA–2039/U (A)	8	7. 0	BA–2070/U (A)	5	4. 20
BA–2039/U (B)	28	140. 0	BA–2070/U (B_1)	23	84. 0
BA–40 (A)	1	1. 40	BA–2070/U (B_2)	21	56. 0
BA–40 (B)	23	84. 0	BA–1080/U (A)	5	4. 0
BA–1040/U (A)	1	1. 0	BA–1080/U (B_1)	21	70. 0
BA–1040/U (B)	21	72. 0	BA–1080/U (B_2)	21	50. 0
BA–2040/U (A)	1	1. 40	BA–200/U	7	5. 6
BA–2040/U (B)	23	84. 0	BA–2200/U	7	5. 6
BA–41 ($-$A to $+B_1$)	20	26. 60	BA–202/UF	3	1. 35
BA–41 ($-B_2$ to $+B_2$)	32	53. 20	BA–2202/UF	3	1. 35
BA–2041/U ($-$A to $+B_1$).	20	26. 60	BA–203/U	6	5. 6
			BA–1203/U	5	5. 0
BA–2041/U ($-B_2$ to $+B_2$).	32	53. 20	BA–2203/U	6	5. 6
			BA–204/U	6	2. 8
BA–42	3	1. 35	BA–2204/U	6	2. 8
BA–2042/U	3	1. 35	BA–205/U	6	2. 8
BA–44	5	5. 32	BA–2205/U	6	2. 8
BA–2044	5	5. 32	BA–206/U	6	8. 0
BA–48 (A)	1	1. 35	BA–2206/U	6	8. 0
BA–48 (B)	26	84. 0	BA–207/U	6	8. 40
BA–1048/U (A)	1	1. 0	BA–2207/U	6	8. 40
BA–1048/U (B)	21	72. 0	BA–208/U	8	2. 80
BA–2048/U (A)	1	1. 35	BA–1208/U	5	2. 0
BA–2048/U (B)	26	84. 0	BA–2208/U	8	2. 80
BA–50	9	2. 70	BA–209/U	6	2. 70
BA–2050/U	9	2. 70	BA–2209/U	6	2. 70
BA–51	24	62. 10	BA–210/U	7	5. 6
BA–1051/U	21	48. 0	BA–1210/U	5	5. 0
BA–2051/U	24	62. 10	BA–2210/U	7	5. 6
BA–53	18	42. 0	BA–211/U	12	21. 0
BA–1053/U	12	36. 0	BA–1211/U	11	18. 0
BA–2053/U	18	42. 0	BA–2211/U	12	21. 0
BA–56	15	41. 40	BA–212/U (A)	1	1. 40
BA–2056/U	15	41. 40	BA–212/U (B)	27	84. 0
BA–58	4	1. 35	BA–2212/U (A)	1	1. 40
BA–2058/U	4	1. 35	RA–2212/U (B)	27	84. 0
BA–59	16	42. 0	BA–216/U	5	4. 20
BA–1059/U	13	36. 0	BA–2216/U	5	4. 20
BA–2059/U	16	42. 0	BA–218/U (A_1)	5	2. 80
BA–63	18	42. 0	BA–218/U (A_2)	1	1. 28
BA–1063/U	12	36. 0	BA–218/U (B)	24	145. 6
BA–2063/U	18	42. 0	BA–218/U (C)	8	6. 40
BA–65	1	1. 40	BA–2218/U (A_1)	5	2. 80
BA–2065/U	1	1. 40	BA–2218/U (A_2)	1	1. 28
BA–67 (A)	7	2. 76	BA–2218/U (B)	24	145. 6
BA–67 (B)	25	82. 8	BA–2218/U (C)	8	6. 40
BA–2067/U (A)	7	2. 76	BA–220/U (A)	1	1. 35
BA–2067/U (B)	25	82. 80	BA–220/U (B)	26	84. 00

Battery type No.	Jack No.	Minimum permissible voltage	Battery type No.	Jack No.	Minimum permissible voltage
BA–2220/U (A)	1	1. 35	BA–1264/U(B)	25	102. 0
BA–2220/U (B)	26	84. 0	BA–1265/U(A)	1	1. 0
BA–221/U (A)	3	1. 38	BA–1265/U(B)	21	72. 0
BA–221/U (B_2)	27	124. 2	BA–266/U	27	165. 6
BA–221/U (C)	12	5. 52	BA–2266/U	27	165. 6
BA–2221/U (A)	3	1. 38	BA–270/U(A)	1	1. 35
BA–2221/U (B_2)	27	124. 2	BA–270/U(B_1 only)	14	41. 4
BA–2221/U (C)	12	5. 5	BA–270/U(B_2 only)	15	41. 4
BA–222/U	5	5. 60	BA–270/U(C)	12	4. 0
BA–1222/U	5	5. 0	BA–2270/U(A)	1	1. 35
BA–2222/U	5	5. 60	BA–2270/U(B_1 only)	14	41. 4
BA–223/U	13	42. 0	BA–2270/U(B_2 only)	15	41. 4
BA–2223/U	13	42. 0	BA–2270/U(C)	12	4. 0
BA–225/U	5	2. 8	BA–271/U(A)	5	2. 56
BA–2225/U	5	2. 8	BA–271/U(B)	27	124. 2
BA–226/U	7	4. 20	BA–271/U(C_1)	25	86. 6
BA–2226/U	7	4. 20	BA–271/U(C_2)	24	51. 0
BA–227/U	7	2. 70	BA–2271/U(A)	5	2. 56
BA–2227/U	7	2. 70	BA–2271/U(B)	27	124. 2
BA–228/U	15	41. 40	BA–2271/U(C_1)	25	86. 6
BA–1228/U	13	36. 0	BA–2271/U(C_2)	24	51. 0
BA–2228/U	15	41. 4	BA–272/U	4	1. 35
BA–230/U	12	21. 0	BA–2272/U	4	1. 35
BA–2230/U	12	21. 0	BA–1277/U	1	1. 0
BA–231/U	3	1. 40	BA–1278/U(B_1)	13	35. 0
BA–1231/U	1	1. 00	BA–1278/U(B_2)	12	17. 0
BA–2231/U	3	1. 40	BA–1278/U(C)	10	4. 0
BA–232/U	14	20. 7	BA–279/U(A)	1	1. 35
BA–1232/U	12	18. 0	BA–279/U(B_1)	22	63. 0
BA–2232/U	14	20. 7	BA–279/U(B_2 only)	27	63. 0
BA–233/U	15	30. 4	BA–279/U(C)	6	5. 4
BA–1233/U	12	26. 0	BA–2279/U(A)	1	1. 35
BA–2233/U	15	30. 4	BA–2279/U(B_1)	22	63. 0
BA–234/U	16	41. 4	BA–2279/U(B_2 only)	27	63. 0
BA–1234/U	13	36. 0	BA–2279/U(C)	6	5. 4
BA–2234/U	16	41. 4	RA–1288/U	3	1. 00
BA–244/U (A)	1	1. 40	BA–1293/U	10	3. 00
BA–244/U (B)	25	63. 0	BA–304/U	14	20. 70
BA–244/U (C)	10	6. 60	BA–305/U	14	27. 6
BA–2244/U (A)	1	1. 40	BA–1312/U	4	1. 0
BA–2244/U (B)	25	63. 0	BA–1313/U	1	1. 0
BA–2244/U (C)	10	6. 60	BA–3141/U	24	62. 0
BA–1247/U (A)	1	1. 0	BA–1315/U(A)	1	1. 00
BA–1247/U (B)	21	70. 0	BA–1315/U(B)	25	102. 0
BA–258/U (A)	7	6. 75	BA–317/U (A)	1	1. 35
BA–258/U (B)	26	110. 0	BA–317/U (B)	25	82. 8
BA–2258/U (A)	7	6. 75	BA–1318/U	10	4. 0
BA–2258/U(B)	26	110. 0	BA–329/U	14	20. 70
BA–261/U	14	20. 70	BA–1328/U	3	1. 00
BA–2261/U	14	20. 70	BA–1330/U	4	1. 00
BA–2264/U(A)	1	1. 0	BA–331/U	13	13. 80

Battery type No.	Jack No.	Minimum permissible voltage	Battery type No.	Jack No.	Minimum permissible voltage
BA–332/U	13	13. 80	BA–413/U	14	20. 70
BA–333/U	14	20. 70	BA–2413/U	14	20. 70
BA–334/U	14	27. 60	BA–414/U	15	41. 40
BA–335/U	14	27. 60	BA–2414/U	15	41. 40
BA–401/U	3	1. 40	BA–415/U	25	82. 8
BA–2401/U	3	1. 40	BA–2415/U	25	82. 8
BA–402/U	2	1. 40	BA–416/U	27	124. 2
BA–2402/U	2	1. 40	BA–2416/U	27	124. 2
BA–403/U	1	1. 40	BA–417/U	15	21. 0
BA–2403/U	1	1. 40	BA–2417/U	15	21. 0
BA–404/U	1	1. 40	BA–418/U	16	42. 0
BA–2404	1	1. 40	BA–2418/U	16	42. 0
BA–405/U	1	1. 40	BA–419/U	27	84. 0
BA–2405	1	1. 40	BA–2419/U	27	84. 0
BA–406/U	6	2. 70	BA–420/U	28	126. 0
BA–2406/U	6	2. 70	BA–2420/U	28	126. 0
BA–407/U	6	2. 80	BA–421/U	12	21. 0
BA–2407/U	6	2. 80	BA–2421/U	12	21. 0
BA–408/U	8	5. 40	BA–422/U	14	42. 0
BA–2408/U	8	5. 40	BA–2422/U	14	42. 0
BA–409/U	8	5. 60	BA–423/U	23	84. 0
BA–2409/U	8	5. 60	BA–2423/U	23	84. 0
BA–410/U	6	5. 60	BA–424/U	24	126. 0
BA–2410/U	6	5. 60	BA–2424/U	24	126. 0
BA–411/U	5	5. 60	BA–462/U	24	62. 1
BA–2411/U	5	5. 60	BA–463/U	25	63. 0
BA–412/U	5	5. 60	BA–464/U	22	63. 0
BA–2412/U	5	5. 60			

(2) A test data table for nontype numbered batteries follows:

Federal stock No.	Signal Corps stock No.	Jack No.	Minimum permissible voltage
6135–100–0385	3A431	16	41. 40
6135–100–0386	3A2308	16	41. 40
6135–100–0387	3A1562	6	6. 65
6135–100–0389	3A1016	4	1. 30
6135–100–0392	3A789	6	2. 80
6135–100–0394	3A60X	28	82. 80
6135–100–0395	3A60HP	28	82. 80
6135–100–0396	3A144	30	132. 5
6135–100–0398	3A152	6	2. 80
6135–100–0399	3A156	13	8. 28
6135–100–0401	3A157	28	81. 40
6135–100–0403	3A160(A)	1	1. 30
6135–100–0403	3A160(C)	10	3. 90
6135–100–0405	3A164–1	12	6. 90
6135–100–0407	3A164–2	16	27. 60
6135–100–0408	3A164–4	10	7. 0
6135–100–0409	3A164–5	15	20. 70
6135–100–0411	3A164–7	7	5. 60
6135–100–0412	3A164–8	28	82. 80
6135–100–0413	3A164–10	9	5. 60
6135–100–0414	3A164–11	6	2. 80
6135–100–0415	3A164–12	14	12. 42
6135–100–0419	3A164–14	30	165. 60
6135–100–0477	3A4X	9	5. 60
6135–100–0478	3A4FX	1	1. 40
6135–100–0486	3A3303	16	42. 78
6135–100–0487	3A9024	7	2. 80
6135–100–0488	3A7890	27	82. 80
6135–100–0489	3A6567	7	2. 80
6135–100–8636	3A430	16	27. 60
6135–112–8637	3A413–1	16	27. 60
6135–127–1682	3A624	5	5. 32
6135–160–7713	3A985–1	4	1. 30
6135–164–8772	3A2063	9	4. 00
6135–164–8781	3A164–18	30	165. 60
6135–170–9413	3A40A5FL	[1] 1	1. 40
		[2] 15	20. 70
		[3] 15	20. 70
		[4] 9	5. 60
		[5] 10	8. 40
6135–314–5640	3A159	5	2. 80

[1] (A Terminal 1 to 7)
[2] (B_1 Terminal 6 to 7)
[3] (B_2 Terminal 5 to 6)
[4] (C_1 Terminal 3 to 4)
[5] (C_2 Terminal 2 to 7)

Page 33, appendix II. Delete Appendix II.

Figures 13 and 14. Draw a line connecting the center and left terminals of Plug P1 to show an internal connection of the tip and ring.

[AG 413.6 (8 Mar 56)]

By Order of *Wilber M. Brucker*, Secretary of the Army:

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Chief of Staff.

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11–587R, Sig Base Maint Co (2)
11–592R, Hq & Hq Co, Sig Base Depot (2)
11–597R, Sig Base Depot Co (2)

NG: State AG (6); units—same as Active Army except allowance is one copy to each unit.

USAR: None.

For explanation of abbreviations used, see SR 320–50–1.

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DEPARTMENT OF THE ARMY TECHNICAL MANUAL

TM 11–2571

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BATTERY TESTERS

TS–183/U, TS–183A/U

AND TS–183B/U

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DEPARTMENT OF THE ARMY

WASHINGTON 25, D. C., *19 February 1952*

TM 11–2571 is published for the information and guidance of all concerned.

[AG 413.6 (7 Feb 52)]

BY ORDER OF THE SECRETARY OF THE ARMY:

OFFICIAL:
WM. E. BERGIN
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The Adjutant General

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United States Army

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NG: Same as Active Army.

ORC: Same as Active Army.

For explanation of distribution formula, see SR 310–90–1.

AGO 2650B

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Figure 1. Battery Tester TS–183/U or Battery Tester TS–183A/U.

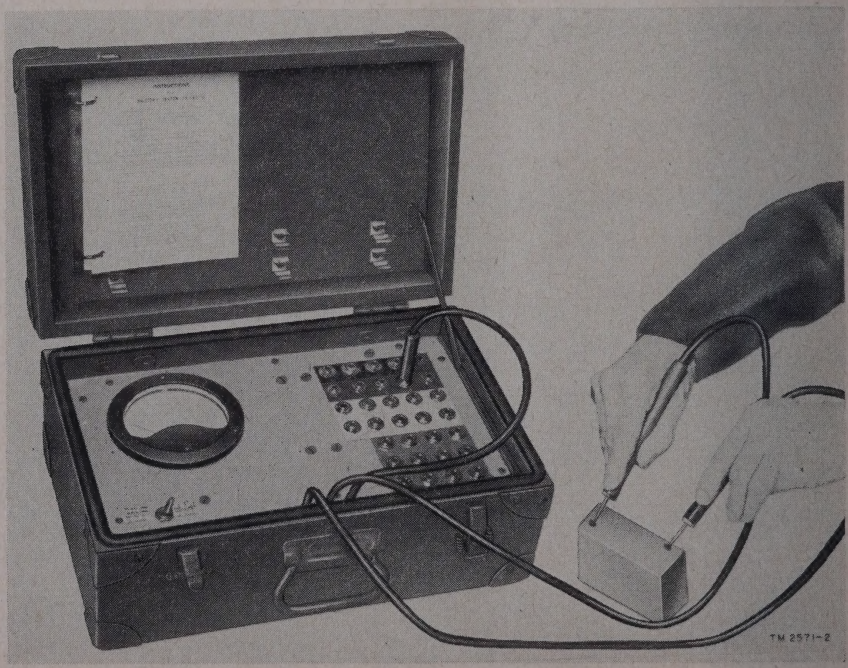


Figure 2. Battery Tester TS–183B/U.

This manual supersedes TM 11–2571, 1 October 1945, including C 1, 24 February 1949.

CHAPTER 1
INTRODUCTION

Section I. GENERAL

1. Scope

a. These instructions are published for the information and guidance of the personnel to whom the equipment is issued. They contain information on the operation and on the organizational maintenance of the equipment as well as a discussion of the theory of operation. These instructions apply only to Battery Testers TS–183/U, TS–183A/U, and TS–183B/U.

b. Appendix I contains a list of current references, including supply catalogs, technical manuals, technical bulletins, and other available publications applicable to the equipment. Appendix II contains an identification table of parts.

c. Basic nomenclature followed by (*) is used to indicate all models of the item of equipment included in this manual; for example, Battery Tester TS–183(*)/U represents Battery Testers TS–183/U, TS–183A/U, and TS–183B/U. Battery Testers TS–183A/U and TS–183B/U are essentially the same as Battery Tester TS–183/U and all information applies equally to all three models, unless otherwise stated.

2. Forms and Records

The following forms will be used for reporting unsatisfactory conditions of Army equipment:

a. DD Form 6, Report of Damaged or Improper Shipment, will be filled out and forwarded as prescribed in SR 745–45–5/AFR 71–4.

b. DA AGO Form 468, Unsatisfactory Equipment Report, will be filled out and forwarded to the Office of the Chief Signal Officer, as prescribed in SR 700–45–5.

c. AF Form 54, Unsatisfactory Report, will be filled out and forwarded to Commanding General, Air Matériel Command, Wright-Patterson Air Force Base, Dayton, Ohio, as prescribed in SR 700–45–5 and AFR 65–26.

d. Use other forms and records as authorized.

Section II. DESCRIPTION AND DATA

3. General Description
(figs. 1 and 2)

a. Battery Tester TS–183(*)/U is a completely self-contained and portable piece of equipment for checking the terminal voltages of dry batteries used by the Signal Corps.

b. By using a multirange voltmeter, a set of load resistors, a set of multiplier resistors, and a jack-switching arrangement that gives a total of 32 different load resistor combinations, a rapid and accurate check of dry batteries, under a load, can be made.

4. Purpose and Use

Battery Tester TS–183(*)/U is designed primarily for measuring the voltages of dry batteries under a load. The voltage rating of these batteries may range from 1.3 volts to 300 volts.

Note. Although the maximum scale of the voltmeter shows only 200 volts, a battery of 300-volt rating may be tested by proper loading.

5. Description of Components

a. Case (figs. 3 and 4). The case that houses the battery tester is made of wood and is finished in olive drab. Four clips for holding the test prods in place and a data chart are mounted inside the hinged cover. A composition gasket, fastened to the upper part of the case, serves to make the case waterproof and dustproof when the cover is closed and the catches are secured.

b. Operating Panel. The operating panel is made of metal and mounts a voltmeter, the load resistors, the multiplier resistors, 32 jacks, 3 test cords, and a NO LOAD-TEST LOAD toggle switch.

c. Voltmeter. The voltmeter is hermetically sealed in a metal case and has four voltage ranges; each range scale is a different color. The pointer of the meter may be adjusted to zero by means of the ZERO ADJ screw. On TS–183B/U, the meter is mounted flush with the operating panel.

d. Load Resistors. The load resistors are mounted on angle brackets on the under side of the operating panel. On the TS–183/U, the load resistors are sealed in an oil-filled container.

e. Multiplier Resistors. On the TS–183/U, the multiplier resistors are sealed in two wax-filled containers. On the TS–183A/U, the multiplier resistors are mounted in a hermetically sealed container which also houses the voltmeter. On the TS–183B/U, the multiplier resistors and voltmeter are a single hermetically sealed

unit. On all models the multiplier resistors are located on the under side of the operating panel.

f. Jacks. The 32 jacks are arranged on the right-hand side of the panel in four color ranges. Each color range of the jacks corresponds to a like color range of the voltmeter scale.

g. Cords. Three insulated cords are brought out through the front of the operating panel. The two left-hand cords are provided with test prods for making contact with the battery terminals, and the selector plug for making jack connections is attached to the right-hand cord.

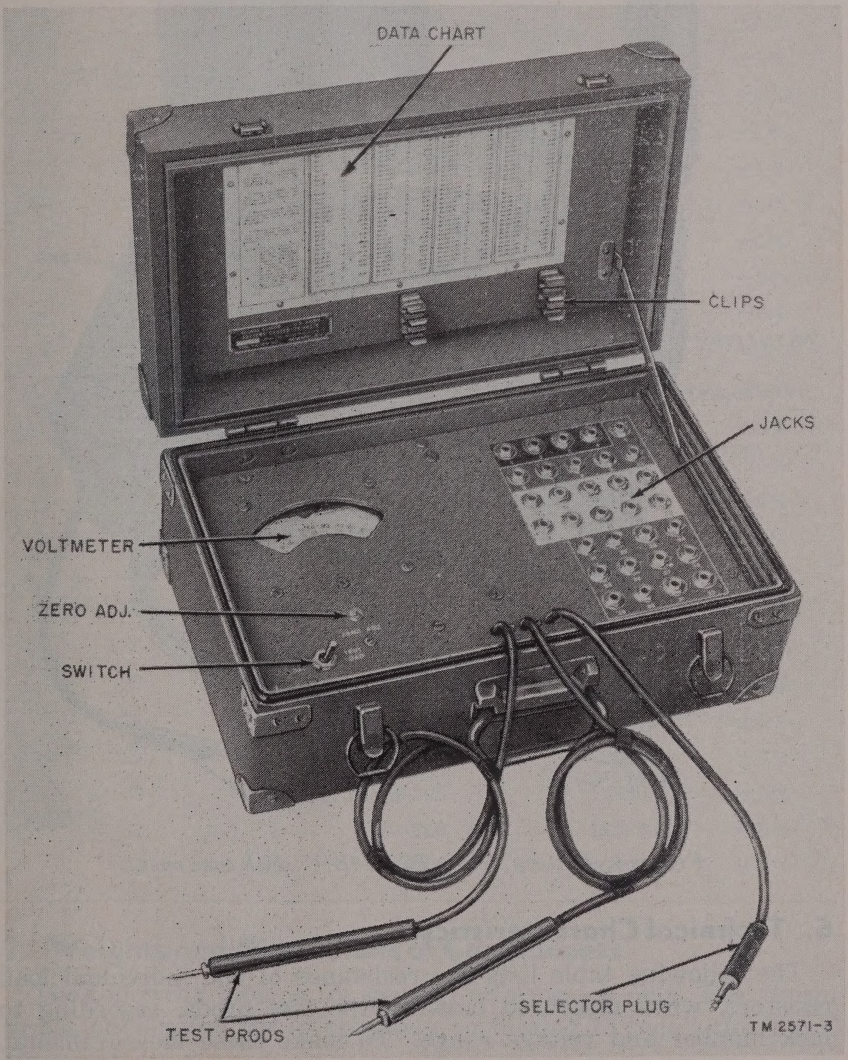


Figure 3. Battery Tester TS–183/U and TS–183A/U, with case open.

h. Switch. The NO LOAD-TEST LOAD switch is a single-pole, double-throw toggle switch of the spring-return type and normally rests in the TEST LOAD position.

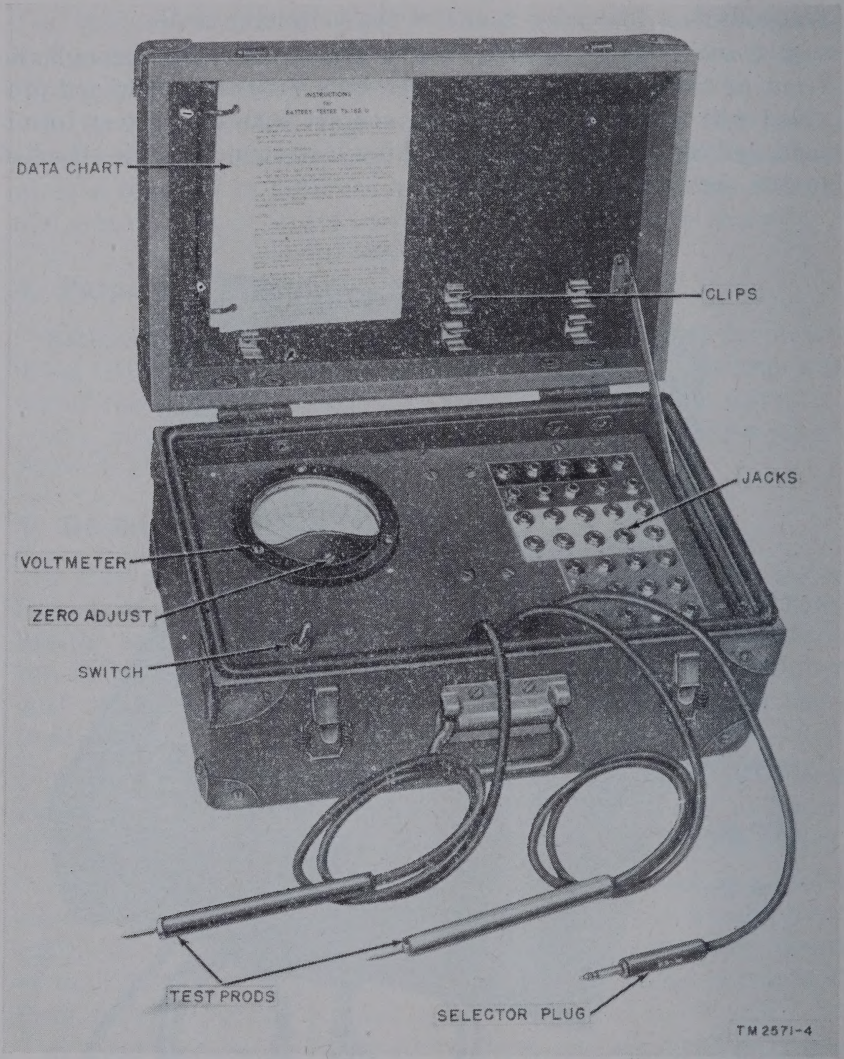


Figure 4. Battery Tester TS–183B/U, with case open.

6. Technical Characteristics

The following table lists the resistance of the individual load resistors, when measured between the test prods, according to jack number and voltage range. To make these measurements, follow the instructions in paragraph 25*c*.

Jack No.	Voltage range	Resistance (ohms)	
1	0–2	1.998	±1%
2	0–2	3.991	±1%
3	0–2	5.983	±1%
4	0–2	19.80	±1%
5	0–10	7.995	±1%
6	0–10	11.99	±1%
7	0–10	19.95	±1%
8	0–10	34.88	±1%
9	0–10	39.85	±1%
10	0–10	49.75	±1%
11	0–50	99.80	±1%
12	0–50	298.2	±1%
13	0–50	544.0	±1%
14	0–50	845.4	±5%
15	0–50	1267.0	±5%
16	0–50	1923.0	±5%
17	0–50	2919.0	±5%
18	0–50	3271.4	±5%
19	0–50	18750.0	±5%
20	0–50	22220.0	±5%
21	0–200	856.2	±5%
22	0–200	995.0	±5%
23	0–200	1292.0	±5%
24	0–200	1980.0	±5%
25	0–200	3053.0	±5%
26	0–200	3440.0	±5%
27	0–200	4879.0	±5%
28	0–200	7230.0	±5%
29	0–200	8648.0	±5%
30	0–200	11320.0	±5%
31	0–200	13995.0	±5%
32	0–200	40000.0	±5%

7. Weights and Dimensions of Components

The following table is for general information only. See appropriate publication for information pertaining to requisitioning of spare parts.

Quantity	Name of component	Dimensions (in.)			Weight (lb)
		Length	Width	Depth	
1	Case	15	9½	7	7.75
1	Operating panel	13⅝	8⅜	⅛	1.3
1	Voltmeter (TS–183/U only)	4½	4½	3	2.6
1	Voltmeter and multiplier resistor assembly (TS–183A/U only).	5½ dia		3	2
1	Voltmeter and multiplier resistor assembly (TS–183B/U only).	3¾ dia		1⅜	2.0
1	Load resistor assembly (TS–183/U only).	4⅞	2¾	2⅞	2.4
1	Load resistor assembly (TS–183A/U and TS–183B/U only).	7	7½	2¾	1.8
1	Multiplier resistor assembly (TS–183/U only).	2¾	⅞	1½	.16
32	Jack	⅞	1	⅞	.03
2	Test cord	36			.2
1	Test cord	9			.06
1	Switch	1⅛	⅝	2	.06

CHAPTER 2
OPERATING INSTRUCTIONS

Section I. SERVICE UPON RECEIPT OF EQUIPMENT

8. Uncrating, Unpacking, and Checking Equipment

a. General. When the equipment is received, select a location where it may be unpacked without exposure to the elements.

Caution: Be careful when uncrating, unpacking, and handling the equipment; it is damaged easily when not protected by the packing case.

b. Step-By-Step Instructions for Uncrating and Unpacking (fig. 5).

(1) Cut and remove the steel straps.

(2) Remove the nails that hold the top and one side of the packing case. Do not attempt to pry off the sides of the top; the equipment may be damaged.

(3) Tear open the heavy waterproof paper surrounding the carton.

(4) Open the carton and remove the bag containing the inner carton.

(5) Open the inner carton and remove the spacer; carefully remove the tester; use the handle to pull it from the carton.

c. Checking. Inspect the equipment for possible damage incurred during shipment. If any damage is noted or the equipment does not check with the packing list, fill out and forward DD Form 6 in accordance with AR 700–30 or AFR 67–5.

9. Installation

Battery Tester TS–183(*)/U is ready for immediate operation when removed from the packing case. No installation or assembly is necessary.

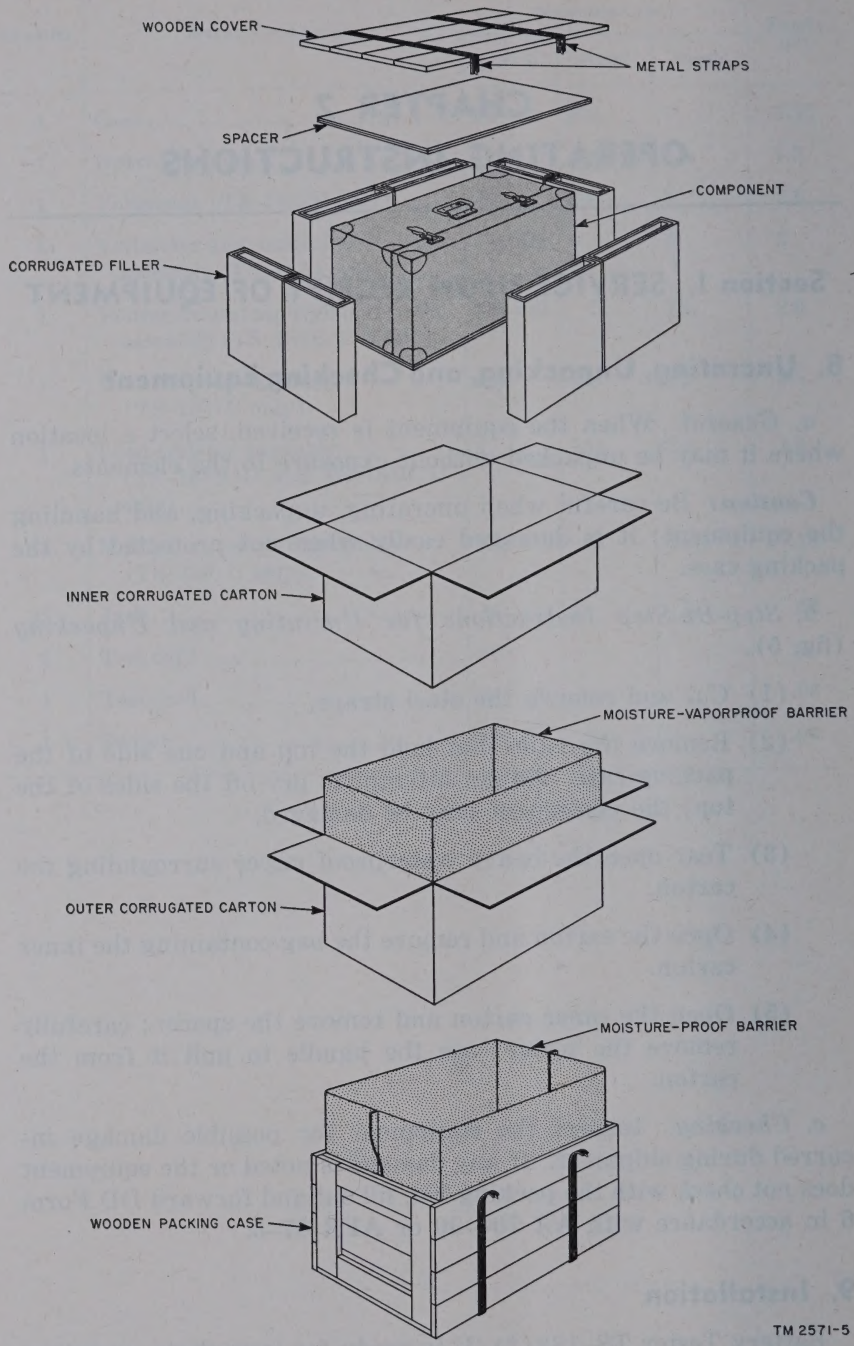


Figure 5. Battery Tester TS–183(*)/U, packaging diagram.

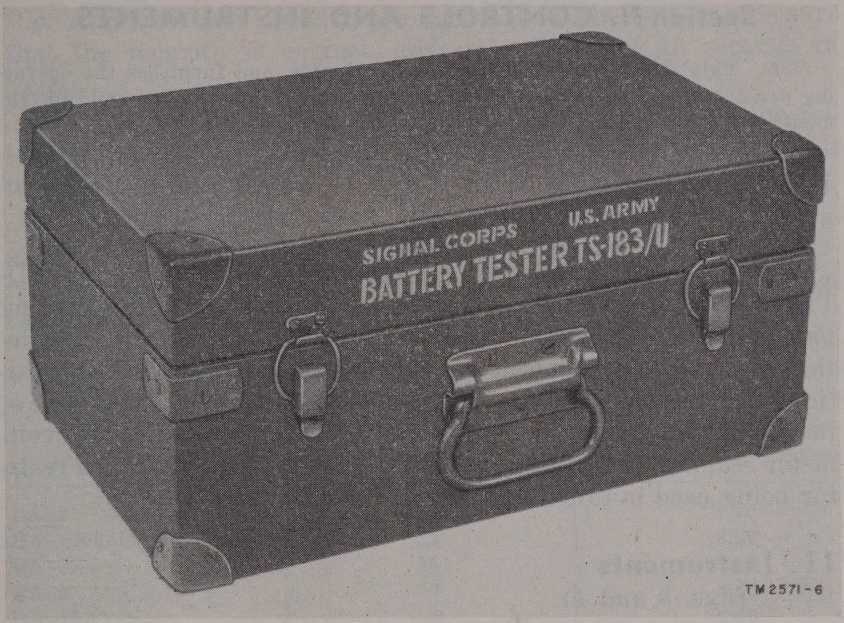


Figure 6. Battery Tester TS–183/U and TS–183A/U, ready for transportation.

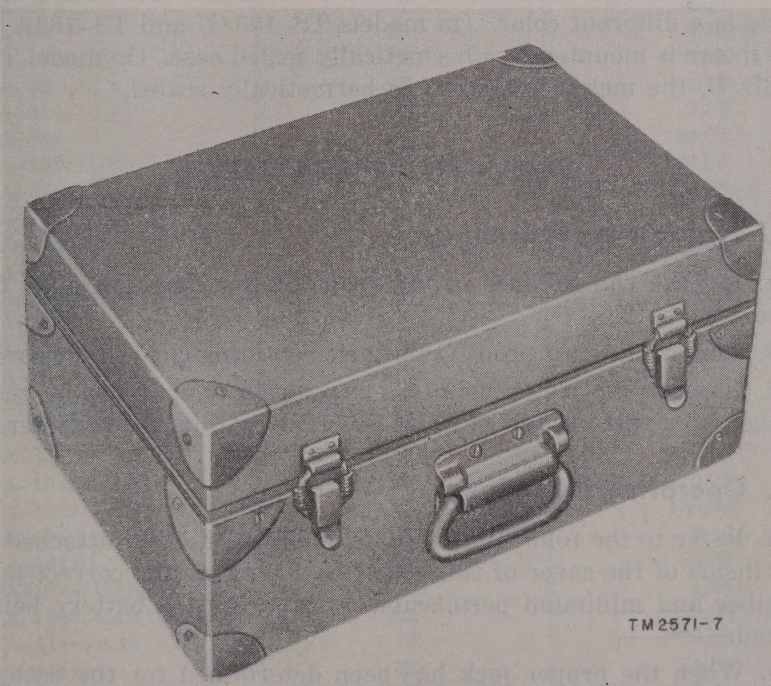


Figure 7. Battery Tester TS–183B/U, ready for transportation.

Section II. CONTROLS AND INSTRUMENTS

Note. This section describes, locates, illustrates, and furnishes the operating personnel with information pertaining to the various controls and instruments provided for the proper operation of the equipment.

10. Controls

(figs. 3 and 4)

Battery Tester TS–183(*)/U has one control, a NO LOAD-TEST LOAD switch, located on the left-hand side of the operating panel directly under the voltmeter. It is a single-pole, double-throw toggle switch and normally rests in the TEST LOAD position. Moving the switch to the NO LOAD position should show, in all tests except those of a new battery, an increase of the voltmeter reading. This is an indication that the particular load resistor being used is functioning properly (par. 25*b*).

11. Instruments

(figs. 3 and 4).

Battery Tester TS–183(*)/U has one instrument, a voltmeter, located on the left-hand side of the operating panel. The meter has four voltage scales: 0–2, 0–10, 0–50, and 0–200 volts; each scale is a different color. On models TS–183/U and TS–183A/U, the meter is mounted in a hermetically sealed case. On model TS–183B/U, the meter case itself is hermetically sealed.

Section III. OPERATION

12. Preliminary Procedure

a. Release the catches on the front of the case and open the cover.

b. Remove the test prods from their retaining clips in the cover.

c. Observe the meter pointer for position and, if not on zero, adjust it by turning the ZERO-ADJ screw with a screw driver.

13. Operating Procedure

a. Refer to the following table, or to the data chart attached to the inside of the cover of the tester, to determine the correct jack number and minimum permissible voltage for the battery being tested.

b. When the proper jack has been determined for the battery being tested, insert the selector plug in the jack.

c. Apply the test prods to the terminals of the battery. Be sure that the polarity is correct, and do not exceed 15 seconds of contact.

d. Compare the reading of the voltmeter with that of the following table or the data chart to determine whether the battery is to be issued or rejected.

e. For use of the NO LOAD-TEST LOAD switch, refer to paragraph 10. The following table gives the battery number, the corresponding jack number, and the minimum permissible voltage to be obtained when making battery tests.

Battery test data

JAN battery type No.	Jack No.	Minimum permissible voltage
BA–2	15	21.00
BA–1002/U	11	18.00
BA–8	15	21.00
BA–9	7	3.80
BA–15A	2	1.40
BA–1015A/U	1	1.00
BA–23	1	1.33
BA–26	16	42.00
BA–27	7	4.00
BA–28	10	4.20
BA–1028/U	6	3.00
BA–30	3	1.35
BA–31	7	3.80
BA–33	28	126.00
BA–1033/U	21	104.00
BA–34	8	6.40
BA–35	1	1.40
BA–1035/U	1	1.00
BA–36	13	42.00
BA–1036/U	12	36.00
BA–37	3	1.40
BA–1037/U	1	1.00
BA–38	25	95.00
BA–1038/U	21	72.00
BA–39(A)	10	7.00
BA–39(B)	28	140.00
BA–1039/U(A)	5	6.00
BA–1039/U(B)	22	120.00
BA–40(A)	1	1.40
BA–40(B)	23	84.00
BA–1040/U(A)	1	1.00
BA–1040/U(B)	21	72.00
BA–41(—A to $+B_1$)	19	26.50
BA–41(B_2)	32	55.00
BA–42	3	1.35

Battery test data

JAN battery type No.	Jack No.	Minimum permissible voltage
BA–44	5	5.20
BA–45	Use vacuum-tube voltmeter.	1.20 (Open circuit)
BA–48(A)	1	1.35
BA–48(B)	26	84.00
BA–1048/U(A)	1	1.00
BA–1048/U(B)	21	70.00
BA–1049/U(A)	1	1.00
BA–1049/U(B_1)	21	54.00
BA–1049/U(B_2)	21	54.00
BA–50	9	2.60
BA–51	24	63.00
BA–1051/U	21	48.00
BA–53	18	42.00
BA–1053/U	13	36.00
BA–56	15	42.00
BA–58	4	1.35
BA–59	16	42.00
BA–1059/U	13	36.00
BA–63	18	42.00
BA–1063/U	21	36.00
BA–65	1	1.40
BA–67(A)	7	2.80
BA–67(B)	25	80.00
BA–70(A)	5	4.30
BA–70(B_1)	23	84.00
BA–70(B_2)	21	55.00
BA–1080/U(A)	1	4.00
BA–1080/U(B_1)	21	70.00
BA–1080/U(B_2)	21	50.00
BA–200/U	8	5.60
BA–202/UF	3	1.35
BA–203/U	6	5.60
BA–1203/U	5	5.00
BA–204/U	6	2.80
BA–205/U	6	2.80
BA–206/U	6	8.00
BA–207/U	6	8.40
BA–208/U	8	2.80
BA–1208/U	5	2.00
BA–209/U	6	2.80
BA–210/U	8	5.60
BA–1210/U	5	5.00
BA–211/U	12	21.00
BA–1211/U	12	18.00
BA–212/U(A)	1	1.40
BA–212/U(B)	27	84.00
BA–216/U	5	4.20
BA–218/U(A_1)	5	2.80

Battery test data

JAN battery type No.	Jack No.	Minimum permissible voltage
BA–218/U(A_2)	1	1.30
BA–218/U(B)	25	145.00
BA–218/U(C)	8	6.40
BA–220/U(A)	1	1.35
BA–220/U(B)	26	84.00
BA–221/U(A)	3	1.35
BA–221/U(B_2)	27	125.00
BA–221/U(C)	10	4.00
BA–222/U	5	5.60
BA–1222/U	5	5.00
BA–223/U	13	42.00
BA–225/U	5	2.80
BA–226/U	7	4.20
BA–227/U	7	2.60
BA–228/U	15	40.00
BA–1228/U	13	36.00
BA–230/U	12	21.00
BA–231/U	3	1.40
BA–1231/U	1	1.00
BA–232/U	14	20.00
BA–1232/U	12	18.00
BA–233/U	15	30.00
BA–1233/U	12	26.00
BA–234/U	16	40.00
BA–1234/U	13	36.00
BA–235/U	11	12.00
BA–236/U	6	8.00
BA–237/U(A)	3	1.35
BA–237/U(B)	25	80.00
BA–237/U(C)	8	4.05
BA–238/U(A)	1	1.40
BA–238/U(B)	25	185.00
BA–239/U	24	125.00
BA–241/U(A)	1	1.40
BA–241/U(B_1)	27	125.00
BA–241/U(B_2)*		
(40.5 v, E to A)	13	37.00
(162 v, H to E)	25	150.00
(C)	4	1.40
(S)	11	11.00
BA–242/U	5	2.60
BA–243/U(A)	1	1.40
BA–243/U(B)*	23	150.00
BA–244/U(A)	1	1.40
BA–244/U(B)	25	63.00
BA–244/U(C)	10	6.60

* Do not apply test prods for more than 10 seconds; do not connect this battery with switch in NO LOAD position.

Battery test data

JAN battery type No.	Jack No.	Minimum permissible voltage
BA–1247/U(A)	1	1.00
BA–1247/U(B)	21	70.00
BA–248/U(B)*		
(67.5 v, E to G)	22	63.00
(141 v, G to F)	24	130.00
(61.5 v, F to H)	21	55.00
(S_1)	14	11.20
(S_2)	14	11.20
BA–249/U	5	5.20
BA–250/U(A)	2	1.35
BA–250/U(B_1)	27	160.00
BA–250/U(B_2)	27	165.00
BA–250/U(C)	12	2.00
BA–251/U	10	2.80
BA–258/U(A)	7	6.80
BA–258/U(B)	26	110.00
BA–261/U	14	20.70
BA–1264/U(A)	1	1.00
BA–1264/U(B)	23	105.00
BA–270/U(A)	1	1.35
BA–270/U(B_1)	14	40.00
BA–270/U(B_2)	15	40.00
BA–270/U(C)	12	4.00
BA–1265/U(A)	1	1.00
BA–1265/U(B)	21	70.00
BA–271/U(A)	5	2.60
BA–271/U(B)	27	125.00
BA–271/U(C_1)	25	85.00
BA–271/U(C_2)	24	50.00
BA–272/U	4	1.35
BA–1277/U	1	1.00
BA–1278/U(C)	10	4.00
BA–1278/U(B_2)	12	18.00
BA–1278/U(B_1)	13	36.00
BA–401/U	3	1.40
BA–402/U	2	1.40
BA–403/U	1	1.40
BA–404/U	1	1.40
BA–405/U	1	1.40
BA–406/U	6	2.60
BA–407/U	6	2.80
BA–408/U	8	5.40
BA–409/U	8	5.60
BA–410/U	6	5.60
BA–411/U	5	5.60
BA–412/U	5	5.60

* Do not apply test prods for more than 10 seconds; do not connect this battery with switch in NO LOAD position.

Battery test data

JAN battery type No.	Jack No.	Minimum permissible voltage
BA–413/U	14	20.70
BA–414/U	16	41.40
BA–415/U	25	84.00
BA–416/U	27	125.00
BA–417/U	15	21.00
BA–418/U	16	42.00
BA–419/U	27	84.00
BA–420/U	28	125.00
BA–421/U	12	21.00
BA–422/U	14	42.00
BA–423/U	23	84.00
BA–424/U	24	125.00
Sig C stock No.		
3A4X	9	5.60
3A4FX	1	1.40
3A60BP	28	80.00
3A60X	28	80.00
3A144	30	130.00
3A152	6	2.80
3A156	9	8.40
3A156–1	27	165.60
3A157	28	80.00
3A159	5	2.80
3A160(A)	1	1.40
3A160(C)	10	4.00
3A164–1	10	7.00
3A164–2	16	27.00
3A164–4	10	7.00
3A164–5	15	20.00
3A164–6	17	41.00
3A164–7	7	5.60
3A164–8	27	80.00
3A164–10	9	5.60
3A164–11	5	2.80
3A164–12	11	12.60
3A164–14	30	165.00
3A164–18	27	165.60
3A413–1	17	27.00
3A430	16	27.00
3A431	18	41.00
3A469(B_1)	30	80.00
3A469(B_2)	18	41.00
3A469(B_3)	18	41.00
3A469(B_4)	18	41.00
3A511	28	80.00
3A624	5	5.20
3A789	6	2.80
3A985–1	3	1.40
3A1016	4	1.40

Battery test data

JAN battery type No.	Jack No.	Minimum permissible voltage
3A1562	6	6.60
3A2063	8	4.00
3A2308	17	41.00
3A3303	17	42.00
3A6567	8	2.80
3A7890	28	80.00
3A9024	7	2.80
3A9047–1, 3A9048	Use vacuum-tube voltmeter.	4.80 (Open circuit) 1.20 (Open circuit)
3A3–1	4	1.00
3A4–4	4	1.00
3A411	15	20.00
3A493	23	145.00
3A600	Special primary cell battery; load (resistance) test not applicable.	

CHAPTER 3
ORGANIZATIONAL MAINTENANCE INSTRUCTIONS

Section I. PRESERVATION

14. Weatherproofing

Signal Corps equipment, when operated under severe climatic conditions, requires special treatment and maintenance. Fungus growth, insects, dust, corrosion, salt spray, excessive moisture, and extreme temperatures are harmful to most materials. A special moistureproofing and fungiproofing treatment has been devised, which, if properly applied, provides a reasonable degree of protection. This treatment is fully explained in TB SIG 13 and TB SIG 72.

15. Rustproofing

To prevent rust formation on the equipment, keep all exposed surfaces in good condition. If the finish of the equipment has been damaged, refinish it as instructed in paragraph 27.

16. Painting and Refinishing

If the painted surfaces of the equipment have become scratched or damaged, rust and corrosion may be prevented by cleaning and retouching as described in paragraph 27.

Section II. PREVENTIVE MAINTENANCE

17. Definition of Preventive Maintenance

Preventive maintenance is a systematic series of operations performed periodically on equipment in order to obtain top efficiency in performance, to reduce unwanted interruptions in service, and to eliminate major break-downs. To understand preventive maintenance, it is necessary to distinguish between it and trouble shooting and repair. The primary function of preventive maintenance is to prevent major break-downs and consequent necessity of repair. In sharp contrast, the primary function of trouble shooting

and repair is to locate and correct existing defects. The importance of preventive maintenance cannot be overemphasized. Each component of a complete system must be ready to operate at peak efficiency when needed, and operators and repairmen must maintain all equipment at such a standard. The most important preventive maintenance operation is a thorough and systematic inspection at regular intervals. Through these inspections, personnel in charge of the equipment should be able to detect abnormal conditions and forestall major break-downs.

18. Materials for Maintenance and Cleaning

Use the following materials for maintenance and cleaning of the equipment:

Clean, dry, lint-free cloth.
No. 0000 sandpaper.
Crocus cloth.
Solvent, dry-cleaning (SD).
Carbon tetrachloride, technical grade.

Caution: Carbon tetrachloride will be used only when a fire hazard would be the result of using inflammable solvents. Electrical contact surfaces must always be cleaned with carbon tetrachloride. Repeated contacts of carbon tetrachloride with the skin or prolonged breathing of the fumes is dangerous. Be sure adequate ventilation is provided.

19. Weekly Maintenance Services
(figs. 8, 9, and 10)

For preventive maintenance services, a weekly period consists of 64 operating hours. The following preventive maintenance operations should be performed weekly by organizational personnel, unless the interval is reduced by the local commanding officer.

a. Clean the operating panel, meter glass, and all accessible parts by blowing with compressed air, wiping with a clean cloth, or brushing. If the dirt is difficult to remove, moisten the cloth with solvent (SD).

b. Check the 4 screws that hold the voltmeter to the operating panel and the 10 screws that hold the operating panel to the case. Tighten if necessary.

c. Inspect jacks for loose mounting nuts and for dirt and corrosion on the contact surfaces.

d. Inspect the selector plug and test prods for dirt and corrosion on the contact surfaces and for broken and frayed insulation of

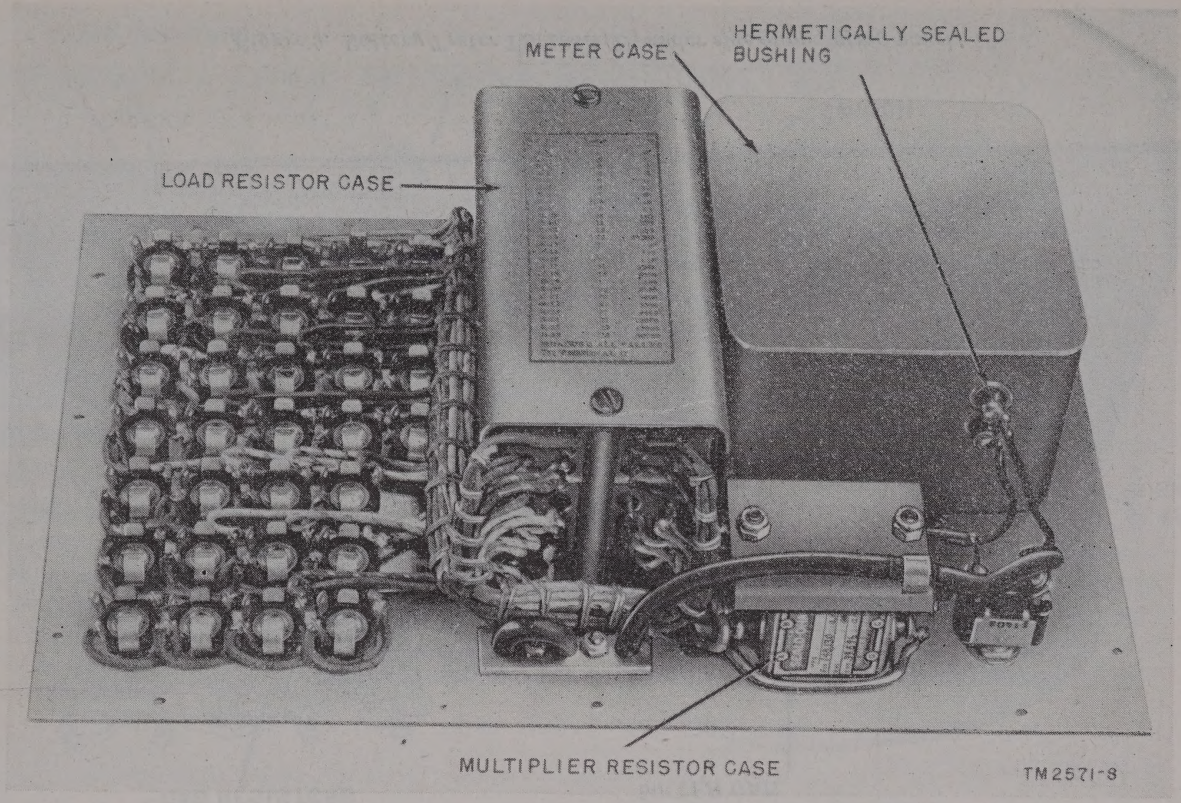


Figure 8. Battery Tester TS–183/U, under side of operating panel.

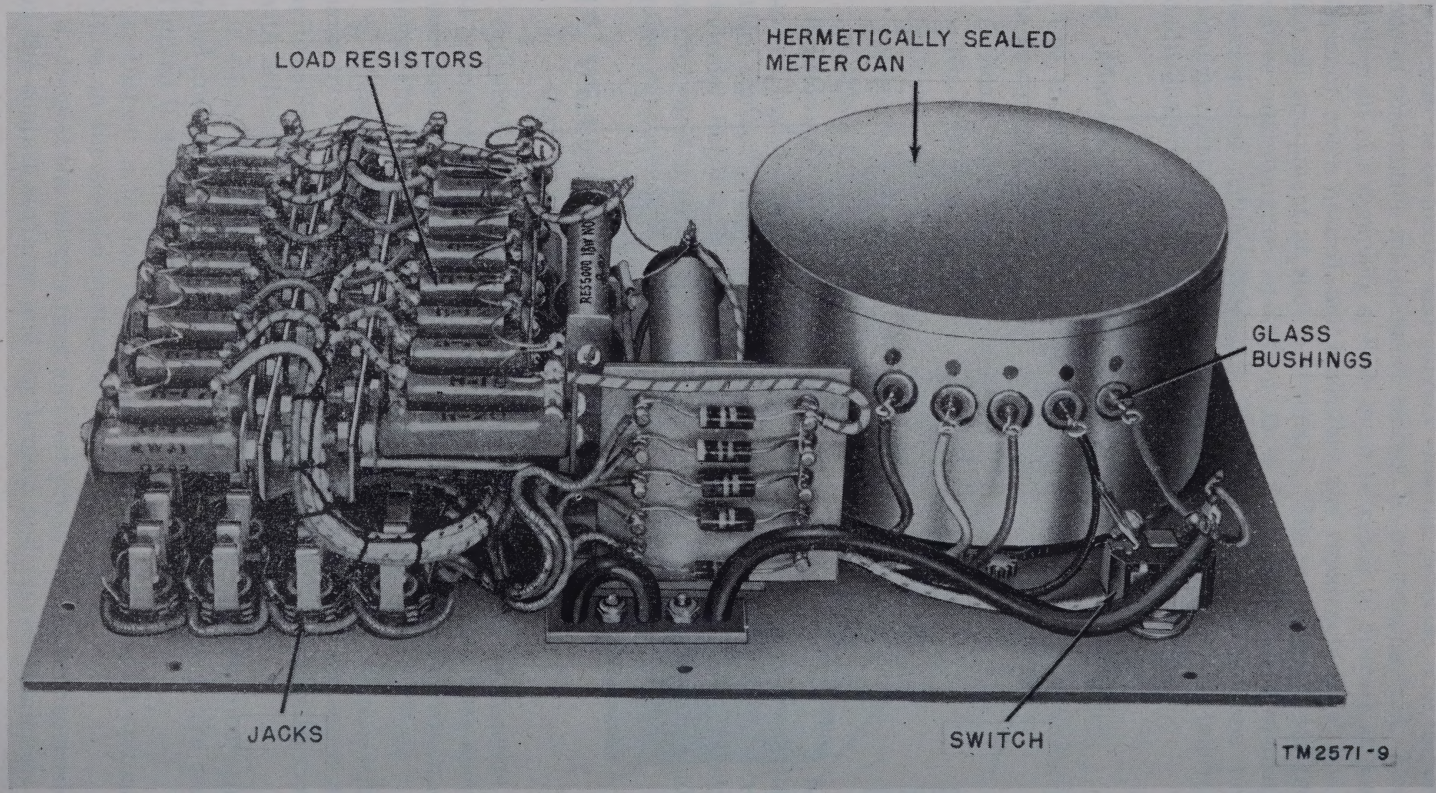


Figure 9. Battery Tester TS–183A/U, under side of operating panel.

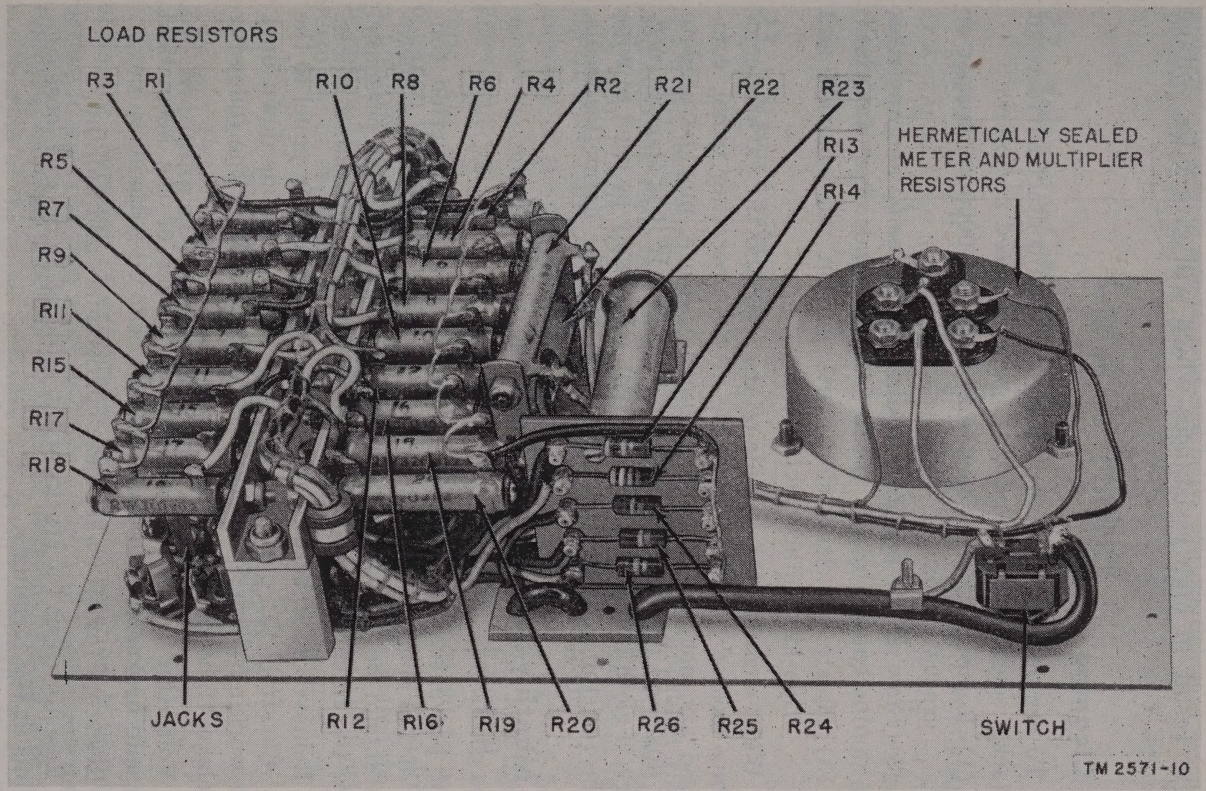


Figure 10. Battery Tester TS–183B/U, under side of operating panel.

the leads. Loosen and slide back the insulation sleeves and check the soldered connections.

Warning: The jacks, selector plug, and test prods must have their contact surfaces cleaned at least once a week. Failure to do so will result in high resistances which will give false voltage readings.

20. Cleaning

a. To remove dirt and corrosion from the contact surfaces of the jacks, selector plug, and test prods, proceed as follows:

(1) Remove dirt and corrosion with No. 0000 sandpaper or crocus cloth.

(2) Blow off the particles of dirt and corrosion and any residue caused by the use of the sandpaper or crocus cloth.

(3) Moisten a clean cloth with carbon tetrachloride and wipe all contact surfaces.

b. When cleaning the outside of the case and the various components located on the under side of the operating panel, compressed air, not exceeding 60 pounds pressure, may be used to blow dust and dirt from inaccessible places. If it is thought necessary, a cloth moistened with solvent (SD) may be used to wipe off the resistor case, the voltmeter case, and the hermetical seals.

21. Monthly Maintenance Services

(figs. 8, 9, and 10)

For preventive maintenance purposes, a monthly period consists of 256 operating hours. The preventive maintenance operations should be performed monthly by organizational personnel unless the interval is shortened by the local commanding officer.

a. Remove the 10 screws that secure the operating panel to the case. Carefully lift out the panel and place it upside down on a clean working surface. Make a visual inspection of the following and clean, tighten, and adjust if necessary:

b. Voltmeter for loose connections, cracks of the hermetical seals, and broken insulators.

c. Resistors for oil leaks, loose connections, and bulging.

d. Resistor cases for cracks of the soldered joints and loose connections at the terminals.

e. Hermetical seal bushings for cracks or looseness.

f. Mountings, screws, and nuts for looseness.

g. Wires, cords, and cables for cracked, cut, or frayed insulation.

h. Jacks for broken or shorted connections; contact surfaces for dirt or corrosion; contact springs for sufficient tension.

Note. Adjust the tension of the jack springs by bending them, either by hand or with a pair of long-nosed pliers. Be careful when making adjustments and when tightening screws, nuts, and bolts. Fittings tightened beyond the pressure for which they are designed will be broken or damaged.

Section III. THEORY

22. Voltmeter Circuit
(fig. 11)

Battery Tester TS–183(*)/U contains a 0 to 1 milliampere, D'Arsonval type meter and is used in conjunction with a set of series-connected multiplier resistors. The resistance of the movement is 100 ohms and the sensitivity of the meter is 1,000 ohms per volt.

23. Circuit Switching
(fig. 11)

Circuit switching is accomplished between the voltmeter ranges and the load resistors by the use of a selector plug and 32 jacks. The cord of the *positive* test prod is internally connected to the tip and the ring of the selector plug. By inserting the plug into any one of the 32 jacks, the positive terminal of a battery being tested is connected, first to one side of a load resistor and then to one of the junctions between the series-connected multiplier resistors. The other side of the load resistor is connected to a line common to one side of all the load resistors. The common line is connected through the NO LOAD-TEST LOAD switch to the negative prod. When the negative prod is applied to the negative terminal of the battery being tested, the circuit is completed.

Section IV. TROUBLE SHOOTING

24. Meaning of Trouble Shooting

Trouble shooting involves the detection and location of the cause of faulty operation of equipment and the correction of the fault before it develops into a break-down which will necessitate major repairs. Trouble shooting consists of sectionalization and then localization of the cause of faulty operation or failure. In sectionalization, the cause is traced through a series of checks to determine the component of the equipment or system in which the cause of trouble is located. The cause then is localized by a further

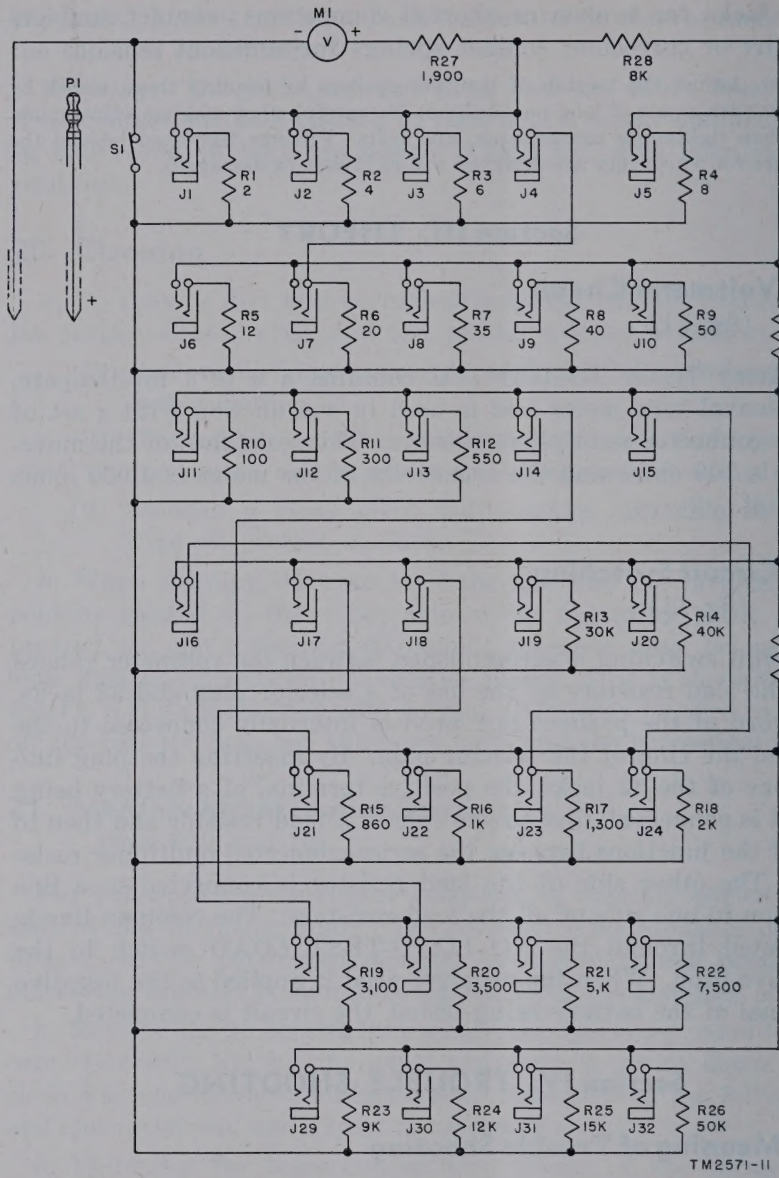


Figure 11. Battery Tester TS–183 (*) /U, schematic diagram.

series of checks to determine the specific part that is responsible for the difficulty or failure. All operational difficulties have certain rather definite symptoms which will serve as clues to the cause of trouble. Operators should learn to identify these clues, since they will save valuable time in localizing troubles. After identifying the clue, refer to the trouble-shooting chart (par. 26).

25. Step-by-Step Procedures

Faulty operation of Battery Tester TS–183(*)/U usually is caused by failure of one or more of the load resistors, the multiplier resistors, or the voltmeter.

a. Failure of the voltmeter or the multiplier resistors will probably result in no movement of the meter.

b. Failure of a load resistor will result in an unchanged reading of the voltmeter when the NO LOAD-TEST LOAD switch is moved from one position to the other. The function of the NO LOAD-TEST LOAD switch is described in paragraph 10.

c. When uncertain of the operation of the load resistors, an ohmmeter may be connected between the test prods and, by inserting the selector plug in each of the 32 jacks, the value of each resistor may be measured. The measured values then can be checked against the values given in the table in paragraph 6.

d. The wiring diagram (figs. 12, 13, and 14) should be followed for accuracy in checking through the circuit.

26. Trouble-Shooting Chart

Symptom	Probable cause	Remedy
Voltmeter fails to operate for all plug positions.	Broken or loose connection to tip of plug.	Check and correct connections.
	Defective meter	Replace meter (par. 5*c*).
	Open multiplier resistor	Replace resistor.
Voltmeter fails to operate for one or more plug positions.	Weak jack contact spring.	Adjust contact spring (par. 21).
	Broken connection to jack.	Check connections.
	Open multiplier resistor	Replace resistor (par. 5*e*).
All load resistors have no loading effect.	Broken or loose connection to ring of plug.	Check connections to plug.
	Defective toggle switch	Replace switch.
	Broken or loose connection to switch.	Check connections to switch.
One load resistor has no loading effect.	Weak jack contact spring.	Adjust contact spring (par. 21).
	Broken connection to jack.	Check connections.
	Defective resistor	Replace resistor (par. 5*d*).

Section V. REFINISHING

27. Rustproofing and Painting

a. When the finish on the case has been scarred or damaged, rust and corrosion can be prevented by touching up any bare spots of the surface. Use No. 00 or No. 000 sandpaper to clean the surface to a bright smooth finish.

Caution: Do not use steel wool. Minute particles frequently enter the case and cause internal grounds and short circuits.

b. When a touch-up job is necessary, apply paint with a small brush. Remove rust from the case by cleaning corroded metal with solvent (SD). In severe cases it may be necessary to use solvent (SD) to soften the rust and to use sandpaper to complete the preparation for painting. Paint used will be consistent with existing regulations.

28. Tropicalization

The equipment has been coated with a special moistureproofing and fungiproofing compound. After any repairing has been done, the protective coating also must be repaired. This treatment is explained fully in TB SIG 13 and TB SIG 72.

CHAPTER 4
SHIPMENT AND LIMITED STORAGE AND DEMOLITION TO PREVENT ENEMY USE

Section I. SHIPMENT AND LIMITED STORAGE

29. General

If the equipment is not to be used for an indefinite period or is to be transported a considerable distance, follow the procedures given in *a* and *b* below:

a. Rustproofing. Clean the unit and inspect it for any signs of damage; rustproof the unit as described in paragraph 27.

b. Refinishing. After the unit has been rustproofed, inspect the finish for signs of wear or damage. If any wear or damage is noted, refinish the unit as described in paragraph 27.

30. Shipment

When the equipment has been processed as described above, it is ready for shipment or storage. For instructions on packing and crating, reverse the procedures given in paragraph 8.

Section II. DEMOLITION TO PREVENT ENEMY USE

31. General

The demolition procedures outlined in paragraph 32 will be used to prevent the enemy from using or salvaging this equipment. Demolition of the equipment will be accomplished *only* upon order of the commander.

32. Methods of Demolition

a. Smash. Smash meters, resistors, switches, control panels, and cases, using sledges, axes, handaxes, pickaxes, hammers, crowbars, and heavy tools.

b. Cut. Cut all wires, cables, cords, and leads, using axes, handaxes, and machetes.

c. Burn. Burn all technical manuals, instructions books, covers, and packing cases, using gasoline, kerosene, oil, flame throwers, and incendiary grenades.

d. Explode. If explosives are necessary, use firearms, grenades, and TNT.

e. Disposal. Bury or scatter all remaining parts of the equipment in slit trenches, fox holes, and other holes, or throw them into streams.

f. Destroy Everything. Use anything immediately available for destruction of the equipment.

APPENDIX I
REFERENCES

Note. For availability of items listed, check SR 310–20–3, SR 310–20–4, and SR 310–20–5.

1. Regulations

a. Army.

AR 380–5	Safeguarding Military Information.
AR 750–5	Maintenance of Supplies and Equipment: Maintenance Responsibilities and Shop Operation.

b. Special.

SR 310–20–3	Index of Training Publications (Field Manuals, Training Circulars, Firing Tables and Charts, Army Training Programs, Mobilization Training Programs, Army Training Tests, Graphic Training Aids, Joint Army-Navy-Air Force Publications, Combined Communications Board Publications and Army Communications Publications).
SR 310–20–4	Index of Technical Manuals, Technical Regulations, Technical Bulletins, Supply Bulletins, Lubrication Orders, Modification Work Orders, Tables of Organization and Equipment, Reduction Tables, Tables of Allowances, Tables of Organization, and Tables of Equipment.
SR 310–20–5	Index of Administrative Publications (Army Regulations, Special Regulations, Joint Army-Air Force Adjustment Regulations, General Orders, Bulletins, Circulars, Commercial Traffic Bulletins, Army Procurement Circulars, Department of the Army Pamphlets, and ASF Manuals.

SR 700–45–5	Unsatisfactory Equipment Report (Reports Control Symbol CSGLD–247).
SR 745–45–5/ AFR 71–4	Report of Damaged or Improper Shipment (Reports Control Symbols CSGLD–66 (Army), and AF–MC–U2 (Air Force)).

2. Supply Publications

SB 11–6	Dry Battery Supply Data.
SB 11–47	Preparation and Submission of Requisitions for Signal Corps Supplies.
SB 11–76	Signal Corps Kit and Materials for Moisture- and Fungi-Resistant Treatment.
SB 11–100	Serviceability Standards for Signal Equipment in Hands of Troops.
SB 38–5–3	List of Standard Lubricants, Hydraulic Fluids, Liquid Fuels and Preservative Materials Used by the Department of the Army.

3. Technical Manuals on Auxiliary Equipment and Test Equipment

TM 11–472	Repair and Calibration of Electrical Measuring Instruments.

4. Painting, Preserving, Maintenance, and Lubrication

TB SIG 13	Moistureproofing and Fungiproofing Signal Corps Equipment.
TB SIG 66	Winter Maintenance of Signal Equipment.
TB SIG 72	Tropical Maintenance of Ground Signal Equipment.
TB SIG 75	Desert Maintenance of Ground Signal Equipment.
TB SIG 123	Preventive Maintenance Practices for Ground Signal Equipment.
TB SIG 178	Preventive Maintenance Guide for Radio Communication Equipment.
TM 9–2851	Painting Instructions for Field Use.

5. Decontamination

TM 3–220	Decontamination.

6. Packaging and Packing Information

a. Military (JAN) Specifications.

JAN–B–121	Barrier-materials; greaseproof.
JAN–C–149 (1)	Compound, protective, strippable (pot-dipping).
JAN–D–169 (4)	Desiccants (activated).
JAN–P–100	Packaging and packing for overseas shipment—general specification.
JAN–P–101	Packaging and packing for overseas shipment—adhesives, water-resistant, for sealing fiberboard boxes.
JAN–P–102	Packaging and packing for overseas shipment—composition topcoating materials, bituminous.
JAN–P–103 (1)	Packaging and packing for overseas shipment—boxes; wood cleated; solid fiberboard.
JAN–P–104	Packaging and packing for overseas shipment—crates, sheathed, wood, nailed.
JAN–P–105A	Packaging and packing for overseas shipment—boxes, wood, cleated, plywood (for boxes whose weight of contents does not exceed 1000 pounds).
JAN–P–106A	Packaging and packing for overseas shipment—boxes; wood, nailed (for weight of contents not in excess of 1,000 pounds).
JAN–P–108 (4)	Packaging and packing for overseas shipment—boxes, fiberboard (V-board and W-board), exterior and interior.
JAN–P–115 (2)	Packaging and packing for overseas shipment—compound, sealing, dip-coating.
JAN–P–116 (2)	Packaging and packing for overseas shipment—preservation, methods of.
JAN–P–117 (2)	Packaging and packing for overseas shipment—bags, interior packaging.
JAN–P–120 (1)	Packaging and packing for overseas shipment—cartons, folding, paperboard.

JAN–P–125(1)	Packaging and packing for overseas shipment—barrier-materials, waterproof, flexible.
JAN–P–127(3)	Packaging and packing for overseas shipment—tape, adhesive, pressure-sensitive, water resistant.
MIL–B–130A	Barrier-material, paper, noncorrosive.
JAN–P–131(3)	Packaging and packing for overseas shipment—barrier-material; moisture-vaporproof, flexible.
MIL–B–131A	Barrier-material; water-vaporproof, flexible.
JAN–P–132(1)	Packaging and packing for overseas shipment — crates; unsheathed, wood; nailed (for maximum net load of 2,500 pounds).
JAN–P–133	Packaging and packing for overseas shipment—boxes, set-up, paperboard.
JAN–P–140	Packaging and packing for overseas shipment—adhesives, water-resistant, case-liner.

b. U. S. Army Specification.

100–2E	Marking shipments by contractors, standard specification for.

c. Signal Corps Instructions.

720–7	Standard Pack.
726–15	Marking of Interior Containers (for Signal Corps Equipment).

7. Other Publications

FM 24–5	Signal Communications.
TB SIG 25	Preventive Maintenance of Power Cords.
TB SIG 219	Operation of Signal Equipment at Low Temperatures.
TM 11–430	Batteries for Signal Communication. Except Those Pertaining to Aircraft.
TM 11–453	Shop Work.
TM 11–490	Electrical Fundamentals.

APPENDIX II
IDENTIFICATION TABLE OF PARTS

Note. The fact that a part is listed in this table is not sufficient basis for requisitioning the item. Requisitions must cite an authorized basis, such as a specific T/O&E, T/A, SIG 7 & 8, SIG 7–8–10, list of allowances of expendable material, or other authorized supply basis. The Department of the Army Supply Catalog applicable to the equipment covered in this manual is SIG 7 & 8–TS–183/U. For an index of available supply catalogs in the Signal portion of the Department of the Army Supply Catalog, see SIG 1.

1. Battery Tester TS–183/U (Sig C stock No. 3F4325–183)

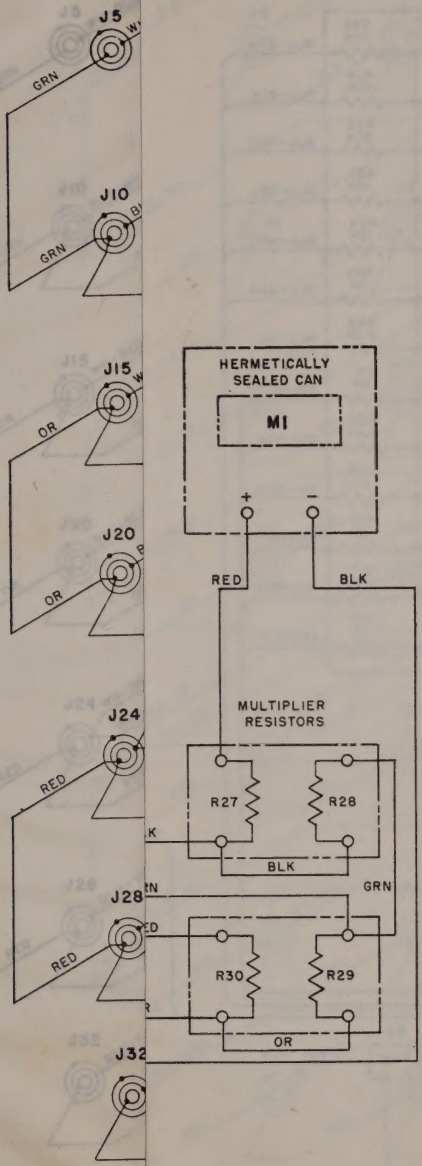
Battery Tester TS–183/U will be replaced as a complete unit. No maintenance parts are authorized and therefore an identification table of parts for this unit is not included in this manual.

2. Battery Testers TS–183A/U and TS–183B/U (Sig C stock No. 3F4325–183)

Ref symbol	Name of part and description	Function of part	Signal Corps stock No.
J1 through J32	JACK, telephone: for 3-conductor plug; contact arrangement J2; JAN type JJ–033; JAN–J–641.	Provides 32 connections for switching between voltmeter ranges and resistors.	2Z5533
M1	METER, voltmeter: dc; 0–2, 0–10, 0–50, 0–200 volts; multiplier resistors are mounted in the hermetically sealed meter case; 3¾″ dia; 1⅜″ d.	Indicates voltage	3F8200–19
M1	METER, voltmeter: dc; 0–2, 0–10, 0–50, 0–200 volts; voltmeter and multiplier resistors are mounted in a hermetically sealed container; 5½″ dia; 3″ d.	Indicates voltage	3F8200–16
P1	PLUG, telephone: 3-conductor type; Sig C Plug PL–68; JAN type PJ–068; JAN–P–642.	Plugs into Jacks JJ-033	2Z7168

Ref symbol	Name of part and description	Function of part	Signal Corps stock No.
	PROD, test: red handle	Contacts positive terminal	3F3705–17.2
	PROD, test: black handle	Contacts negative terminal	3F3705–17.1
R1	RESISTOR, fixed: WW; 2 ohms; ±1%; 10 w	Battery-loading resistor	3Z5992–76
R2	RESISTOR, fixed: WW; 4 ohms; ±1%; 10 w	Same as R1	3Z5994–41
R3	RESISTOR, fixed: WW; 6 ohms; ±1%; 10 w	Same as R1	3Z5996–41
R4	RESISTOR, fixed: WW; 8 ohms; ±1%; 10 w	Same as R1	3Z5998–24
R5	RESISTOR, fixed: WW; 12 ohms; ±1%; 10 w	Same as R1	3Z6001B2–36
R6	RESISTOR, fixed: WW; 20 ohms; ±1%; 10 w	Same as R1	3Z6002–78
R7	RESISTOR, fixed: WW; 35 ohms; ±1%; 10 w	Same as R1	3Z6003E5–27
R8	RESISTOR, fixed: WW; 40 ohms; ±1%; 10 w	Same as R1	3Z6004–54
R9	RESISTOR, fixed: WW; 50 ohms; ±1%; 10 w	Same as R1	3Z6005–188
R10	RESISTOR, fixed: WW; 100 ohms; ±1%; 10 w	Same as R1	3Z6010–234
R11	RESISTOR, fixed: WW; 300 ohms; ±1%; 10 w	Same as R1	3Z6030–132
R12	RESISTOR, fixed: WW; 550 ohms; ±1%; 10 w	Same as R1	3Z6055–11
R13	RESISTOR, fixed: comp; 30,000 ohms; ±5%; 1 w; JAN type RC30BF303J.	Same as R1	3RC30BF303J
R14	RESISTOR, fixed: comp; 39,000 ohms; ±5%; 1 w; JAN type RC30BF393J.	Same as R1	3RC30BF393J
R15	RESISTOR, fixed: WW; 860 ohms; ±5%; 10 w	Same as R1	3Z6086–3
R16	RESISTOR, fixed: WW; 1,000 ohms; ±5%; 10 w; JAN type RW31F102.	Same as R1	3RW24336
R17	RESISTOR, fixed: WW; 1,300 ohms; ±5%; 10 w	Same as R1	3Z6130–17
R18	RESISTOR, fixed: WW; 2,000 ohms; ±5%; 10 w; JAN type RW31F202.	Same as R1	3RW26127
R19	RESISTOR, fixed: WW; 3,100 ohms; ±5%; 12 w; JAN type RW32F312.	Same as R1	3RW27323
R20	RESISTOR, fixed: WW; 3,500 ohms; ±5%; 12 w; JAN type RW32F352.	Same as R1	3RW27611

R21	RESISTOR, fixed: WW; 5,000 ohms; ±5%; 18 w; JAN type RW33F502.	Same as R1	3RW28519
R22	RESISTOR, fixed: WW; 7,500 ohms; ±5%; 24 w	Same as R1	3Z6575–91
R23	RESISTOR, fixed: WW; 9,000 ohms; ±5%; 30 w; JAN type RW34F902.	Same as R1	3RW30006
R24	RESISTOR, fixed: comp; 12,000 ohms; ±5%; 1 w; JAN type RC30BF123J.	Same as R1	3RC30BF123J
R25	RESISTOR, fixed: comp; 15,000 ohms; ±5%; 1 w; JAN type RC30BF153J.	Same as R1	3RC30BF153J
R26	RESISTOR, fixed: comp; 51,000 ohms; ±5%; 1 w; JAN type RC30BF513J.	Same as R1	3RC30BF513J
	WIRE, electrical: insulated; single #12 AWG	Used to make test cords	1B812.61


J5
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OR

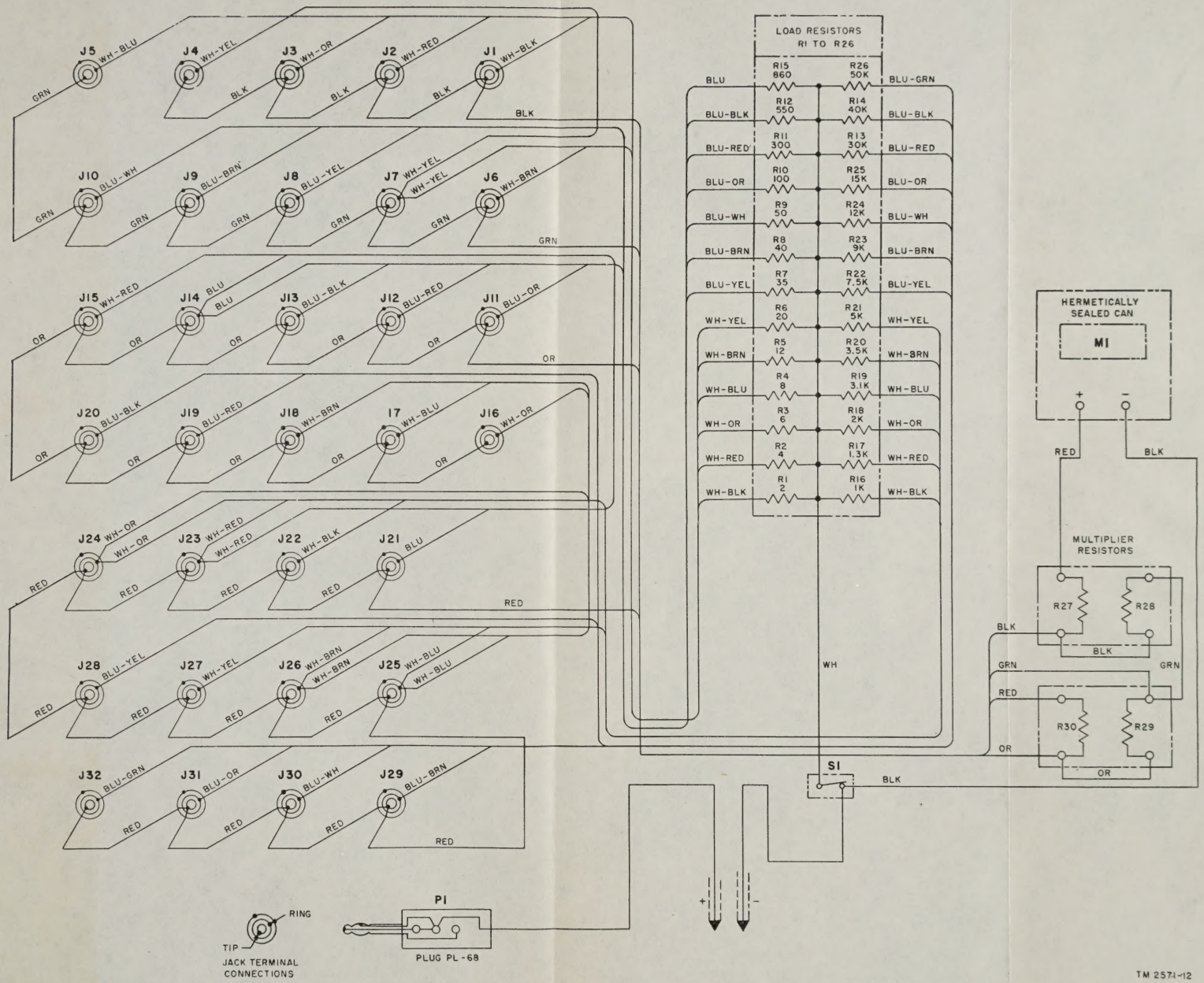
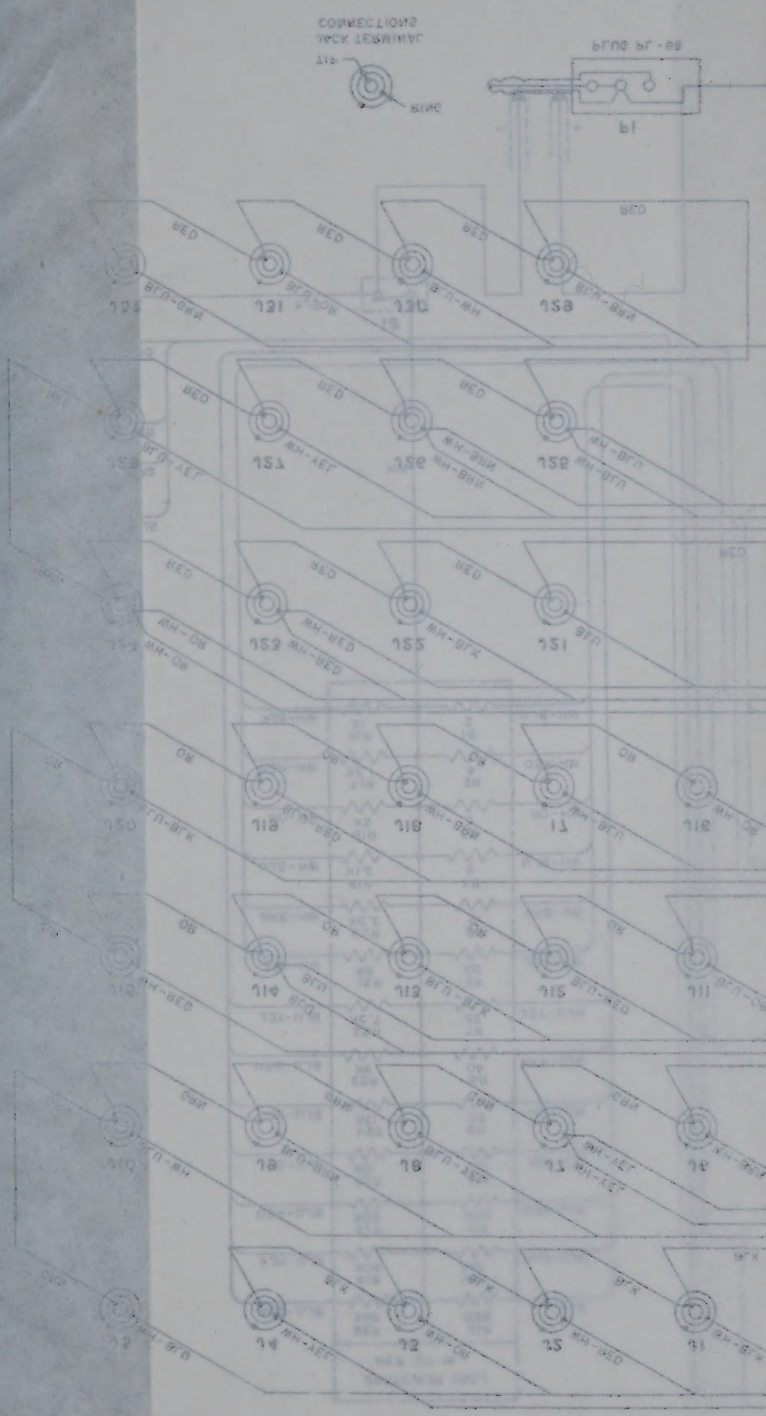
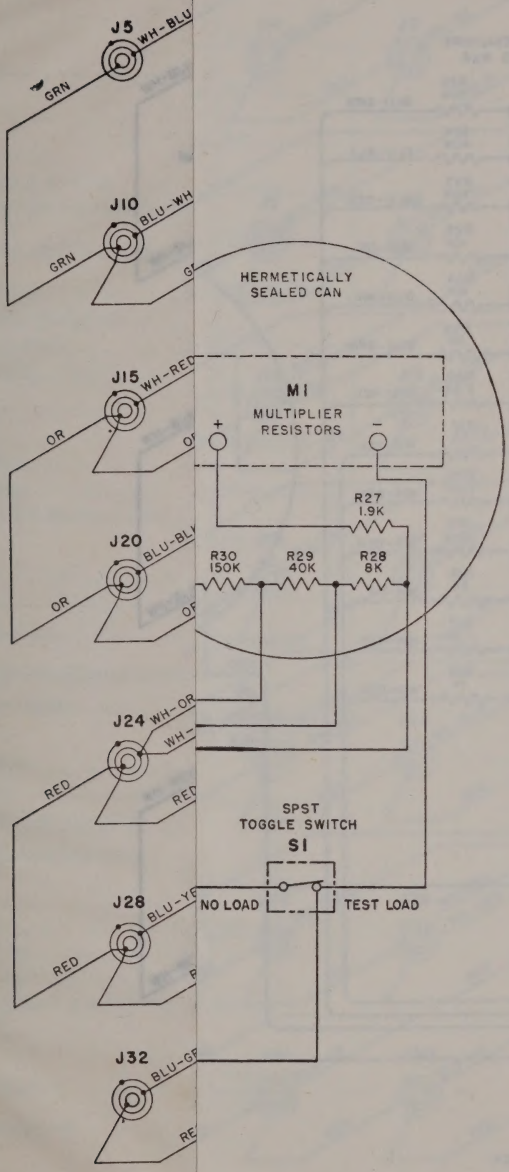


Figure 12. Battery Tester TS–183/U, wiring diagram.

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R28
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TOGGLE SWITCH
S1
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P1
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JACK TERMINAL
CONNECTIONS

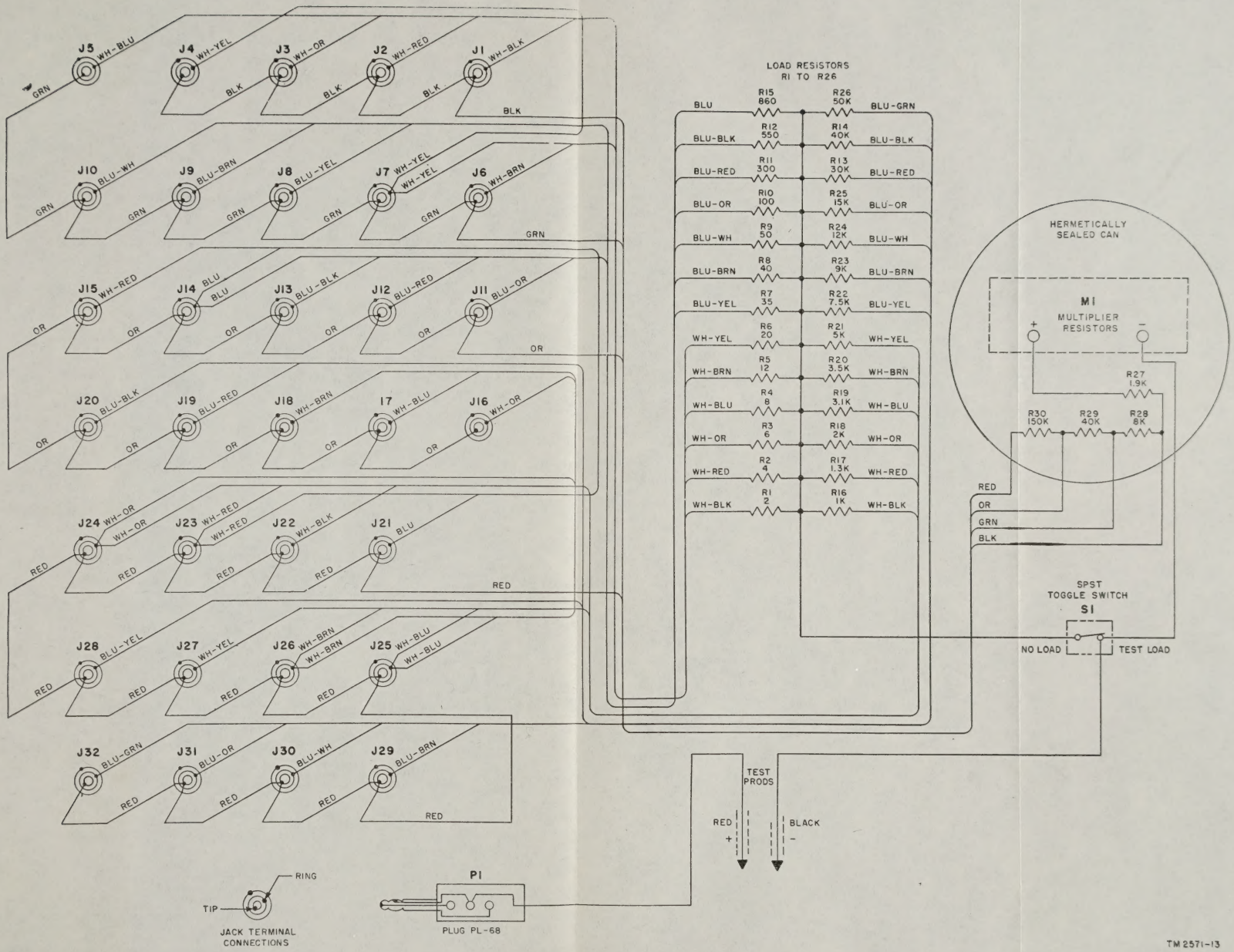
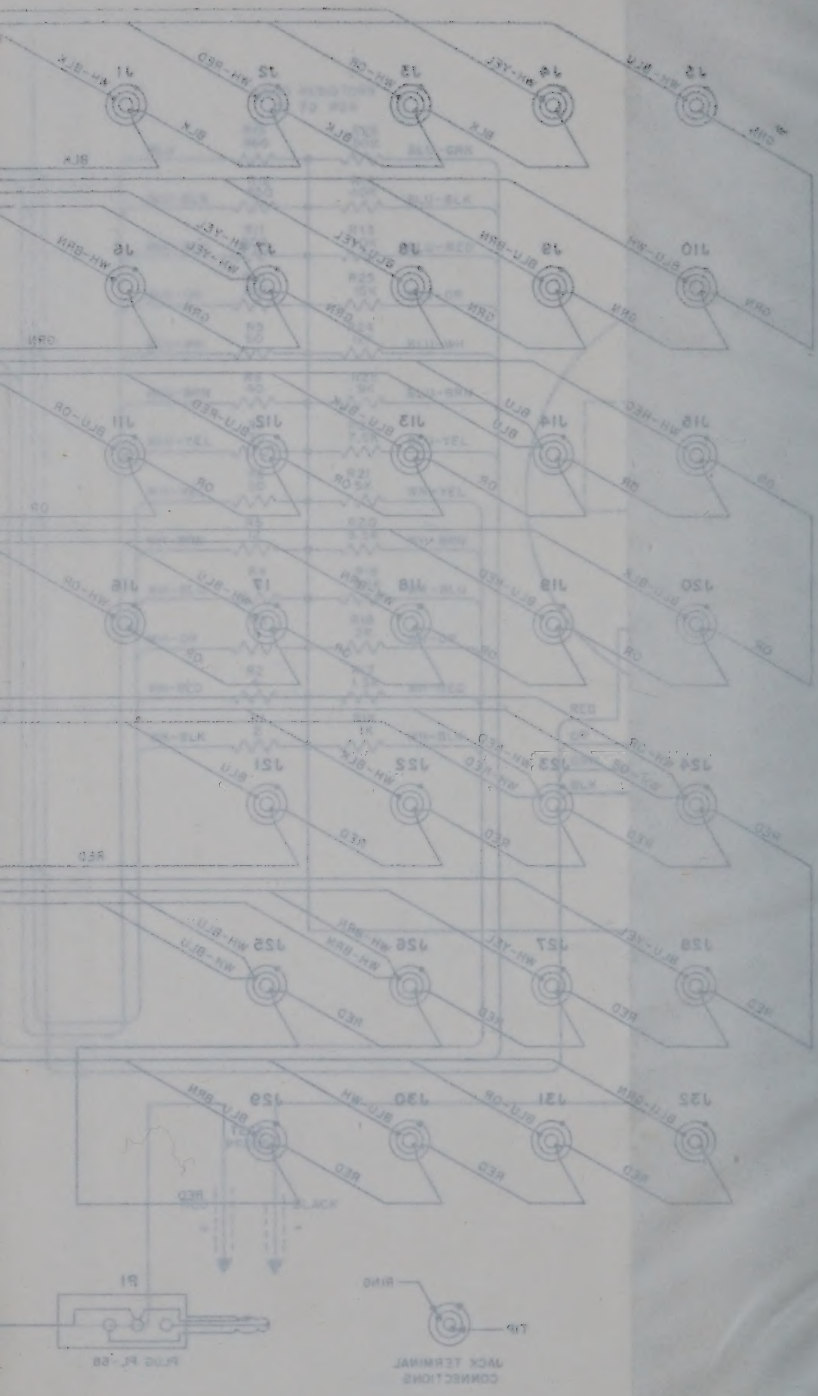
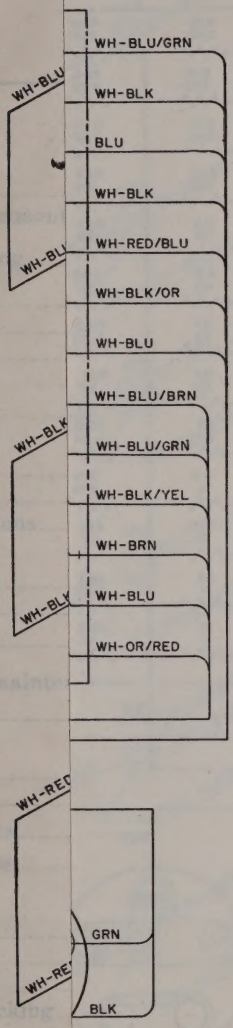


Figure 13. Battery Tester TS–183A/U, wiring diagram.





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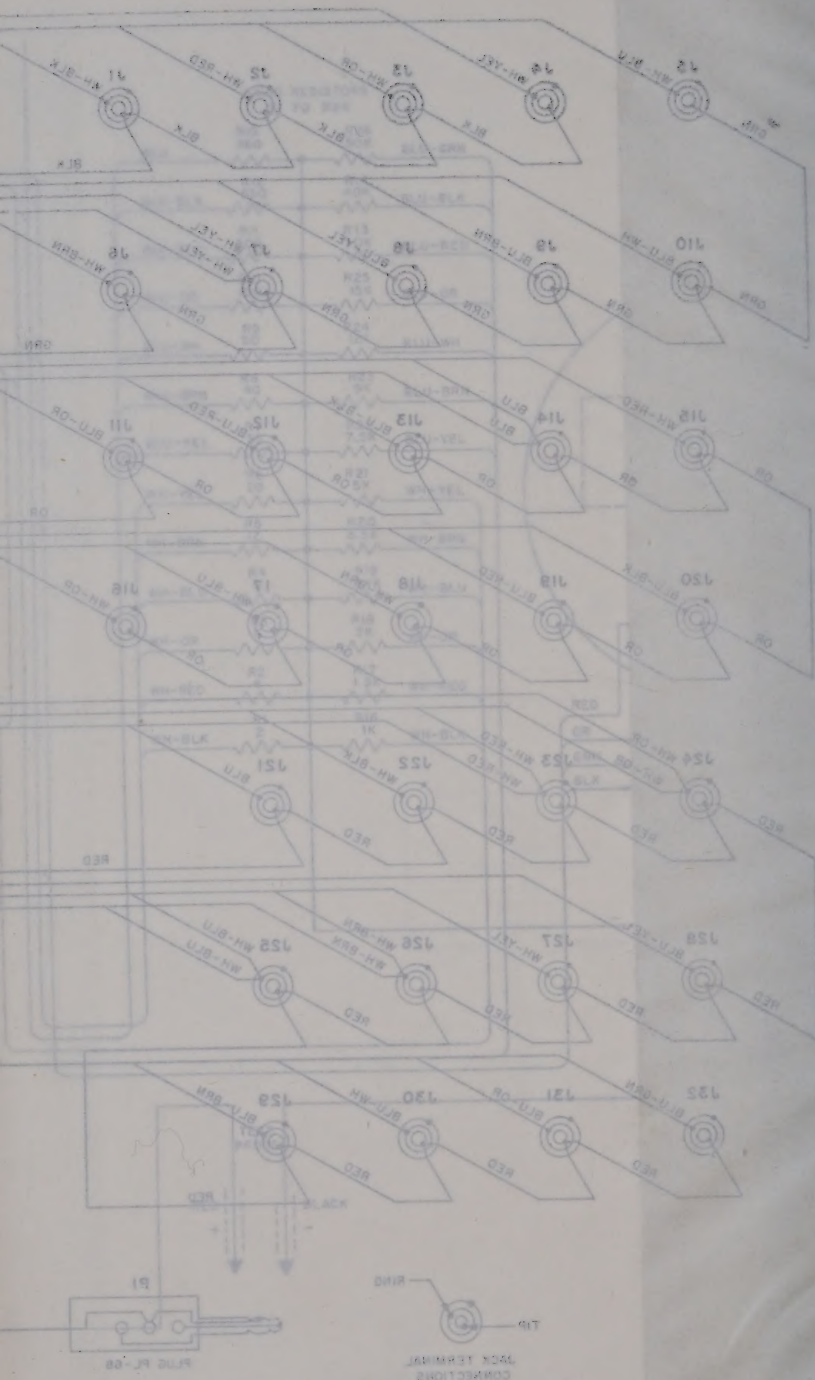


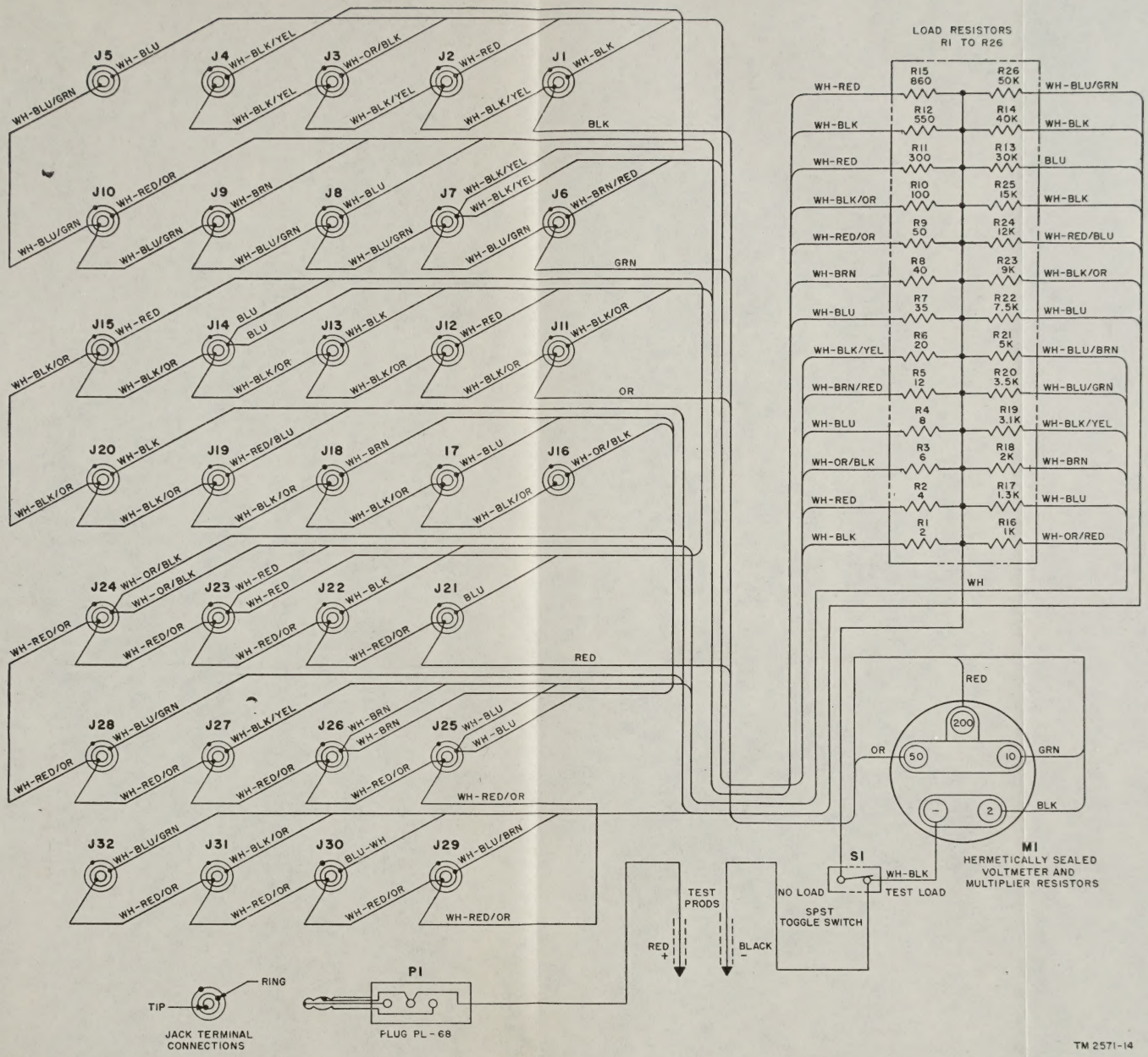
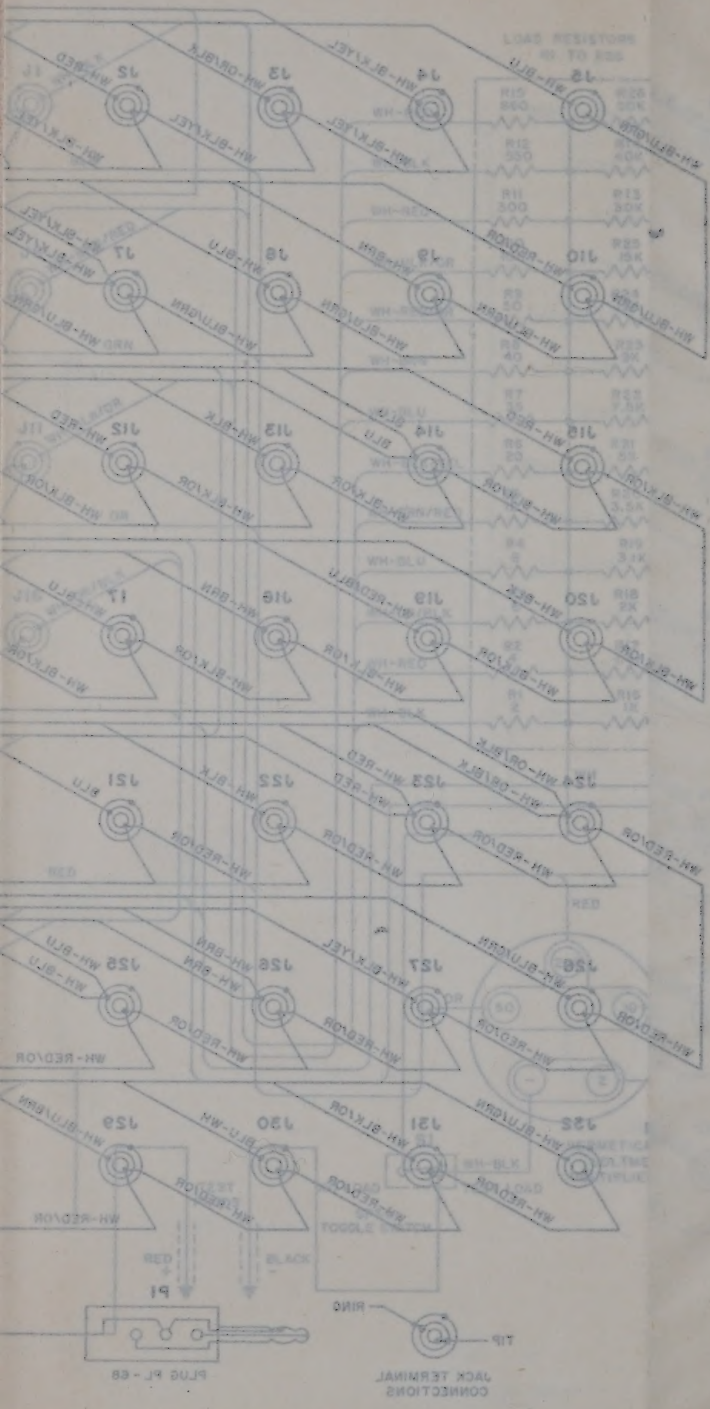


Figure 14. Battery Tester TS–183B/U, wiring diagram.


J1
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J3
J4
J5
J6
J7
J8
J9
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J12
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J16
J17
J18
J19
J20
J21
J22
J23
J24
J25
J26
J27
J28
J29
J30
J31
P1
PLUG PL-68
JACK TERMINAL CONNECTIONS
TIP
RING
RED
BLACK

diagram.

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DATE ISSUED	SIGNATURE OF RECIPIENT	DIVISION SECTION OR OFFICE	DATE RETURNED

EMC 330 (1 NOV 54)

PUBLICATION BATTERY, TESTER: MODEL TS-183/U, TS-183A/U, TS-183B/U, MAINTENANCE MANUAL DTD 19 FEB 52	CHARGE OUT RECORD CARD

DATE ISSUED	SIGNATURE OF RECIPIENT	DIVISION SECTION OR OFFICE	DATE RETURNED
JUL 25 1957	O. Rhein	2712	SEP 9 1958

EMC 330 (1 NOV 54)

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